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Lacy I. Moffett

A Key to the Birds of the Lower Yangtse Valley,

WITH POPULAR DESCRIPTIONS OF THE SPECIES
COMMONLY SEEN.



BY

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AND

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ERRATA.

- Page 4 line 42—"Gavidæ" should read Gaviidæ.
- „ 7 „ 36— do. do.
- „ 5 „ 8—"Threskiornithidæ" should read
Ibididæ.
- „ 23 „ 5— do. do.
- „ 22 „ 13—"Mesophoyx" should read
Mesaphoyx.
- „ 27 „ 36—"Nettopus" should read Nettapus.
- „ 40 „ 41—"hights" should read thighs.
- „ 52 „ 13—"Blandford's" should read
Blandfordi.
- „ 52 „ 18—After word "claws" insert—
yellow.
- „ 55 „ 2—"japonica" should read japonicus.
- „ 56 „ 18—"two are found in China" should
read about twenty are found
in China.
- „ 57 „ 13—"outer" should read central.
- „ 65 „ 39—"jouvi" should read jouyi.
- „ 67 „ 23—Paragraph beginning "The dis-
tinguishing mark" should
read as follows:—The dis-
tinguishing mark of the
species is that "the lesser
wing coverts are grey like the
greater and median wing
coverts instead of being
mottled with brownish buff
and black like the back."
- „ 70 „ 24—"Helodromus" should read
Helodromas.
- „ 77 „ 40—"Squaterola squaterola" should
read Squatarola squatarola.
- „ 85 „ 2—"Hydropogne" should read
Hyroprogne.

Page 92 between lines 11 and 12 insert *Cuculus micropterus*, Gould.

„ 104 line 35—"bracyotus" should read brachyotus.

„ 109 „ 30—After the word "the" insert—wing.

„ 116 „ 25—"winter visitant" should read resident.

„ 132 „ 34—"this bird" etc. omit entire line, as identification was wrong. Insert *White-throated*

*A series taken in Aug. 1918 proved this bird to be *Corvus pictus* and not a *Corvus*—*

Laughing Thrush (*D. albigularis*), marked by a white throat and more of an olive cast to the upper parts, is a west China species, which has been taken once in the summer on Mokansan.

„ 134 „ 38—"tin" should read tint.

„ 150 „ 38—"Myiophonous" should read Myiophoneus.

„ 156 „ 9—"sueccia" should read sneccica.

„ 157 „ 34—"Werns" should read *Wrens*.

„ 159 „ 23—delete (*Locustella ochotensis* (Midd))

„ 216 „ 35—"Tristam's" should read Tristram's.

„ 216 „ 36—"tristami" should read tristrami.

A KEY TO THE BIRDS OF THE LOWER YANGTSE VALLEY

BY

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AND

LACY I. MOFFETT, KIANGYIN.

INTRODUCTION.

China, judged from the standpoint of its bird population falls into three great regions—North, West and South. The Yangtse River forms a convenient dividing line between the North and South, while the Western zone includes Thibet and the western part of Szechuan Province down to Ichang.

The Northern zone has about 40 species of birds peculiar to itself, the Western zone has about 60, and the Southern zone has about 150, making a total of approximately 250 birds peculiar to China.

In addition to these, there are about 550 species found in China and also in other parts of the world. Of these, some 300 occur in the Palearctic Region, which covers Europe and Asia north of a line skirting the Himalayas and the Yangtse; while about 250 species are common to China and Southern Asia and are not to be found elsewhere.

This total of about 800 birds for all China is based on the list printed by Pere David in 1877. A number of doubtful species were admitted to his list which have been since rejected, on the other hand a few new ones have been added, so the total remains substantially the same. In the present state of the ornithology of China more exact figures would be difficult to give, but these round numbers may be accepted as a working basis until further data are obtained.

The Yangtse Valley, forming the boundary line between the Northern and Southern zones, is a most interesting field in which to study the birds of China. Being on the border line, many birds from both zones occur. Our winter visitants come down to escape the Arctic cold which settles over their nesting homes during the winter; while many of the sub-tropical birds reach this as the limit of their northern migration.

In 1891, Mr. F. W. Styan published a list of 359 birds occurring in the Yangtse Basin, between Hankow and the sea, which he classified as follows:—

Breeders; Resident ...	90
Summer	
Visitants 52 ...	142
Non-breeders; Winter	
Visitants	101
Migrants...	97
Strays.....	11
Doubtful... 8 ...	217
<hr/>	
Total.....	359

In 1894 and 1899, Mr. Styan added a number of other species to this list.

A revision of these lists was published in 1912 in the Journal of

the North China Branch of the Royal Asiatic Society, in which a number of species were added, bringing the total species now recorded in this region up to about half of all known in the whole of China.

It is our purpose in the descriptions which follow to notice only the ones of this number which are likely to be met with by the ordinary observer of bird life.

No originality is claimed for these notes, they are written with one purpose only, to give a popular description by which the common birds may be readily identified by the bird lover who has neither time nor facilities for making a more scientific study.

The only full description of Chinese birds in print is an old French work by Pere David (*Oisieux de la Chine*, Paris 1877) which is now very rare and difficult to obtain. To the technical scientist there are many authorities available, but to the ordinary student and lover of birds, most of these are entirely inaccessible.

The greatest lack in ornithological literature of China is not the scientific descriptions of species—perhaps few remain yet to be described—but the sort of careful popular study that has taught us so much of the intimate personal ways of the birds of America and England. We must be able to identify a bird at least by some name before we can study its habits successfully. If these notes help to make such identification easier, and such study more general, they will have accomplished their purpose.

The system of classification adopted is that of Gadow as modified by Dr. F.

H. Knowlton in his *Birds of the World* (New York, 1909). Sub-orders and sub-families have been omitted except where they seemed necessary for clearness. Dr. Knowlton's work together with that of Dr. F. M. Chapman (Handbook of Birds of Eastern North America, New York, 1912) have both been largely used in preparing the descriptions of orders and families. Dr. C. W. Richmond has also given us many helpful suggestions as to the systematic side of the notes. While permission has been secured from these authorities to make use of their works, no quotation marks have been used, and they are in no sense responsible for the form in which the statements appear.

In the descriptions of individual species we are very much indebted to the very careful notes on Chinese birds made by the late Dr. Paul D. Bergen, the manuscript copy of which he very kindly turned over to us when he had to leave China on account of his health. We have revised most of these and have compared our final descriptions with others or checked them over with the skins where these were available.

We have also had access to many other standard works on birds of the other parts of the world and have tried to make the errors as few as possible. If, however, any mistakes occur which would mislead in the identification of the birds listed we will appreciate having them pointed out to us.

CLASSIFICATION.

ORDER.—COLYMBIFORMES, Diving Birds.

Family.—Gaviidae, Loons.

Family.—Podicipedidae, Grebes.

ORDER.—CICONIIFORMES, Stork - like Birds.

Family.—Pelecanidae, Pelicans.

Family.—Phalacrocoracidae, Cormorants.

Family.—Ardeidae, Herons.

Family.—Ciconiidae, Storks.

Family.—Threskiornithidae, Ibises.

Family.—Plateleidae, Spoonbills.

ORDER.—ANSERIFORMES, Goose - like Birds.

Family.—Anatidae, Swans, Geese and Ducks.

Sub-family.—Cygninae, Swans.

Sub-family.—Anserinae, True Geese.

Sub-family.—Anatinae, River Ducks.

Sub-family.—Fuligulinae, Sea Ducks.

Sub-family.—Merginae, Mergansers.

ORDER.—FALCONIFORMES, Falcon-like Birds.

Family.—Falconidae, Falcons.

Family.—Buteonidae, Kites, Eagles, Hawks, etc.

Sub-family.—Pandioninae, Ospreys.

Sub-family.—Milvinae, Kites.

Sub-family.—Aquilinae, Eagles.

Sub-family.—Vulturinae, Vultures.

Sub-family.—Circinae, Harriers.

Sub-family.—Buteoninae, Buzzards.

Sub-family.—Accipitrinae, Sparrow Hawks.

ORDER.—CALLIFORMES, Fowl-like Birds.

Family.—Turnicidae, Bustard Quails.

Family.—Phasianidae, Pheasants, Quails.

Sub-family.—Perdicinae, Old World Quails and Partridges.

Sub-family.—Phasianinae, Pheasants.

ORDER.—GRUIFORMES, Crane - like Birds.

Family.—Rallidae, Rails.

Family.—Gruidae, Cranes.

Family.—Otidae, Bustards.

ORDER.—CHARADRIIFORMES, Plover-like Birds.

Family.—Charadriidae, Plovers,
Snipe, Curlews, Lapwings.

Family.—Glaucolidae, Pratincoles.

Family.—Jacanidae, Jacanas.

Family.—Laridae, Gulls and Terns.

Sub-family.—Larinae, Gulls.

Sub-family.—Sterninae, Terns,

Family.—Columbidae, Doves and
Pigeons.

ORDER.—CUCULIFORMES, Cuckoo-like Birds.

Family.—Cuculidae, Cuckoos.

ORDER.—CORACIIFORMES, Roller-like Birds.

Family.—Coraciidae, Rollers.

Family.—Alcedinidae, Kingfishers.

Family.—Meropidae, Bee-eaters.

Family.—Upupidae, Hoopoes.

Family.—Strigidae, Owls.

Family.—Caprimulgidae, Goat-suck-
ers.

Family.—Micropodidae, Swifts.

Family.—Picidae, Woodpeckers.

ORDER.—PASSERIFORMES, Sparrow-like Birds.

Family.—Alaudidae, Larks.

Family.—Motacillidae, Wagtails and
Pipits.

Family.—Enicuridae, Forktails.

Family.—Timeliidae, Babbling
Thrushes.

Family.—Pycnonotidae, Bulbuls.

Family.—Muscicapidae, Flycatchers.

Family.—Turdidae, Thrushes.

Family.—Cinclidae, Dippers.

Family.—Troglodytidae, Wrens.

Family.—Sylviidae, Warblers.

Family.—Regulidae, Kinglets.

Family.—Hirundinidae, Swallows.

Family.—Campephagidae, Minivets.

Family.—Diceruridae, Drongos.

Family.—Ampelidae, Waxwings.

Family.—Laniidae, Shrikes.

Family.—Sittidae, Nuthatches.

Family.—Paridae, Titmice.

Family.—Paradoxornithidae, Crow-tits.

Family.—Oriolidae, Orioles.

Family.—Corvidae, Crows.

Family.—Sturnidae, Starlings.

Family.—Zosteropidae, Silver Eyes.

Family.—Certhiidae, Creepers.

Family.—Ploceidae, Weaver Birds.

Family.—Fringillidae, Finches, Sparrows, etc.

ORDER, COLYMBIFORMES. THE LOONS AND GREBES.

Birds of this group are all markedly aquatic, duck-like birds, of medium or large size with moderately long necks, long sharp pointed bills, usually strong but small wings, and webbed or lobed toes.

The order is divided into two families:—The Loons (Gavidae) and the Grebes (Podicipedidae.)

Loons are distinguished by having the hind toe on a level with the other toes, which are united by a web. They have a tail of 18 or 20 short stiff feathers.

In the Grebes, the hind toe is raised above the level of the others, and all the toes are provided with lateral lobes. The tail is usually so reduced as to be indistinguishable though never really absent.

Family, Gavidae, Loons or Divers.

Loons have four toes tipped with a broad nail, the front three fully webbed. They are very largely aquatic, visiting the land only to nest. Their food consists of fish, which is procured by diving, at which they are perhaps the

most expert of all the birds. Loons have strong wings, and although they rise from the water with difficulty, when once under way their flight is exceedingly swift and straight.

The sexes are alike in plumage, although there is considerable difference between the summer and winter dress.

Four of the five known species of Loons range over the northern portion of the northern hemisphere, and occur in China, the remaining species being confined to the Pacific coast of North America. Only one species is reported from the Yangtse Valley.

RED THROATED DIVER, OR LOON.

GAVIA STELLATA (PONTOPPIDON).

(*Gavia Septentrionalis* L.)

Description.—Length, 28 inches.

Bill, horn color, straight and sharp. Legs, brownish green. Forehead, crown, and nape, dark gray, mottled light gray; sides of the neck, blue gray, also mottled.

In summer the throat has a triangular reddish brown spot, which gives the bird its popular name. This spot usually disappears in winter.

The throat, breast, and abdomen, are white; and the back is black spotted with white.

The mottled crown and forehead is the distinguishing mark of this Loon at all seasons of the year.

Distribution.—Europe, America, and Asia.

Frequently seen along the central China coast and inland, during the migrating season, it comes south only

for the winter, and breeds in the circumpolar regions.

It has been taken in Fokien, and the coast provinces northward, and David reports it in western China.

The note is a loud, wild, melancholy cry, which has been spelled, "kakera, kakera."

Family, Podicipedidae, The Grebes.

Grebes have four toes, tipped with a broad nail, and furnished with lobate webs. They are mainly aquatic, rarely, if ever, venturing on land, where they are almost helpless. Grebes dive with great rapidity, and often conceal themselves by swimming with only the tip of the bill above water. They feed largely on fish, which are pursued and caught under water. Unlike many other water birds, they do not use the wings in swimming, but depend entirely on their feet.

About 30 different species of Grebes are recognized throughout the world. China has four species, of which one is resident in the Yangtse Valley, and two others are winter visitants.

EASTERN LITTLE GREBE.

COLYMBUS PHILIPPENSIS, BONN.

(Podiceps Minor.)

Description.—Length nine and one half inches.

Bill, black with white tip, and greenish yellow spots at the hinges. Iris yellow. Legs blackish green.

Crown, nape and back dark brown, showing a greenish tinge in winter. The sides of the head are rufous, the chin is black in summer and white in

winter and the rest of the underparts are light silver gray.

The wings are brownish black, and the tail almost lacking.

Immature birds lack the rufous on their heads during the first winter, showing a mixed gray instead. Adults of both sexes have the rufous much brighter in breeding plumage.

The small size readily distinguishes this Grebe from any other China species, the next smaller being four inches longer.

Distribution.—Eastern Asia. This Grebe occurs generally in China, wherever reedy lakes or swamps afford suitable feeding ground. It is resident, and very common in the Yangtse Valley.

Nest and Eggs.—The nest is a rough truncated cone of reeds and grass, loosely attached to standing reeds, but floating in the water, usually near the edge of a swampy pool.

The eggs, four to eight in number, are dull white when fresh, but are soon stained to a dirty brown by the nesting material.

They are bluntly ovate in shape, the two ends being almost equal.

The bird usually covers the eggs with the nesting material when leaving them, making the nest look like a mass of half decomposed, tangled reeds, floating in the water.

Notes.—This little Grebe lives in the water and gets its food from it, rarely flying unless forced to do so. It takes a mixed diet of small fish and other aquatic life. When startled they can disappear almost instantly under water, frequently coming up far to one side among reeds or other cover where they

are difficult to discover. The local Chinese name for them is "water ghost", or "s-wu-lu", given because of their seeming power of mysterious disappearance.

THE GREAT CRESTED GREBE.

COLYMBUS CRISTATUS L.

(Podiceps Cristatus (L.))

Description.—Length 22 inches.

Bill, red at the base and dark on top, with a horn colored tip. Feet and legs, greenish.

There is a long reddish-brown crest and a ruff of the same color on the neck. The sides of the neck and nape are yellowish-brown, lores nearly white. The back is dark iridescent brown. The throat and upper breast are tinged reddish-brown. The abdomen is silvery grey. The secondaries are white, the tertiaries buff and the wing a dusky black.

The *female* has a smaller crest. The head and neck are reddish brown. Breast white in the center, with grey sides, sometimes washed with yellow. Her legs are orange.

"The distinguishing mark of both sexes are the lores which are nearly white at all seasons."

"Immature birds have no crest or ruff and are dark ashy brown above, white below; secondaries and lower scapulars white as in adults."

Distribution.—Europe, Australia, Africa, and Asia. In China it is common generally in suitable localities. It winters in the lower Yangtse Valley, preferring the larger and more open bodies of water. It breeds in the

North, also in the British Isles, India, and Australia.

Notes.—"The habits of the grebe, when on the water, are similar to those of the diver. It is adapted to swimming and diving. It feeds on frogs, fish, water-beetles, and other small aquatic creatures. When alarmed, it sinks its body deeper and deeper into the water and if pursued or in danger, seeks to escape by diving. It makes little use of its wings except when migrating. At most times it is a silent bird, but in breeding season utters a harsh, grating cry."

The Eared Grebe (*Colymbus auritus*) also occurs, but is rare.

ORDER.—CICONIIFORMES, STORK-LIKE BIRDS.

This order is distinguished by having all the toes, including the hind one, connected by a web.

Family, *Pelecanidae*, The Pelicans.

Bill long and broad with hawk-like hook at tip; a large gular pouch; lores bare. The flight of the Pelican is strong but leisurely, six or seven wing-strokes being followed by a short sail, all members of the flock flapping and sailing in unison.

Pelicans are gregarious, and nest in large colonies.

They feed on fish, for which some species plunge from the air, while others scoop up small fry with their pouches while swimming.

Of the twelve known species, only one is likely to be met with on the China coast.

SPOTTED-BILL PELICAN.

PELECANUS PHILIPPENSIS (GM.)

Description.—Length 57 inches, female slightly smaller. Bill, yellow with large bluish-black spots on the upper mandible and some black on the lower one. There is a large dull purple gular pouch, spotted with black. Eyelids and skin around the eyes yellow. Iris, yellowish-white. Legs and feet very dark brown.

In winter, the great part of the plumage is white. There is some pinkish washing on the lower back and under parts. The crown and neck feathers are frizzled. There is a slight crest and a ridge of longer brownish feathers down the back. The wings are marked with dark brown and the tail with light brown.

Young birds, and adults during the summer, lack the pink washing and show some brown on the under parts.

Distribution.—Eastern Asia, wintering from the Yangtse Valley south to India.

Family, Phalacrocoracidae, Cormorants.

The bill of the Cormorant is narrow with a hawk-like hook at the tip. There is no gular pouch and the lores are bare.

As a rule Cormorants are maritime, but they also frequent bodies of fresh water near the coast. Their flight is strong and straight like the ducks, but, except when migrating, is generally not far above the surface of the water.

They feed on fish, which are pursued and caught under water. The family

embraces two genera, with over 40 species, scattered over all parts of the world. Only one species is common on the central China coast.

THE CORMORANT.

PHALACROCORAX CARBO (L.)

Description.—Length 35 inches.

Bill, yellow-brown, Legs, black. Iris green. Bare throat yellow. There is a bare space on each side of the throat extending behind the gape.

A short crest. Plumage in general black, mixed with white on the neck, and iridescent on the back and wings. Wing coverts and scapulars bronze-brown margined with black.

Young birds have plumage mostly brown or dusky.

Distribution.—Cosmopolitan, occurring in Europe, Asia, Africa, Australia, and North America. Resident and common on the coasts of China, and in the Yangtse Valley.

Nest and Eggs.—These birds usually select elevated situations for their nests. They choose the tops of lofty cliffs, or high trees; failing these, they may build in low trees in marshy districts, or even in a bed of rushes. The nest which is large, is composed of sticks or seaweeds, heaped up to a considerable height. It is lined with finer grass.

‘The eggs, small in proportion to the size of the bird, are of a dull, pale bluish or greenish-white color. Three, four, or five or even sometimes six are laid.’

The young bird feeds from its parents’ crop by thrusting its head into the parents’ mouth.

Notes.—The Chinese have domesticated this bird and make it serve the very useful part of fish catcher. They place a ring made of some material around the neck of the bird in order to prevent it from swallowing the fish. They are trained to come back to the boat when the pouch is full and the boatman turns them upside down and pushes the fishes out. Stories are told of large catches, but the writer has never seen any fish of more than a few inches caught by them.

Family, *Ardeldae*, *Hérons*.

The Herons form a relatively compact and generally well-known group. They have long legs; four toes always on the same level, and the claw of the middle toe has a comb-like edge on the inner side. The body is thin and compressed, the neck long, and the bill long, pointed and straight. The lores and a space about the eyes are bare. The wings are large and rounded, and in general the plumage is soft and loose. The peculiar powder-down patches on the rump, abdomen, and elsewhere, are always present. These with the comb-like edge of the middle toe nail form the distinguishing characteristics of the family.

Generally speaking Herons are gregarious, the Bitterns being an exception. Herons fly with their folded neck drawn in between their shoulders, and the feet stretched straight out behind.

There are about 100 species of Herons, of which China has 17, all but three of which reach the Yangtse Valley.

GREY HERON.

ARDEA CINEREA (L.)

Description.—Length 36 inches.

Bill yellow. Legs greenish-yellow. Iris yellow. 'Crest bluish-black. ~~Under parts slate grey.~~ Forehead, cheeks, and neck white, the latter streaked with bluish-grey below and terminating in long white feathers. Underparts greyish-white,' with a bluish-black streak down the sides of the abdomen.

In *immature birds*, the crown and forehead are slate grey.

Distribution.—Europe and most of Asia. Resident in the Yangtse Valley.

Nest and Eggs.—This bird builds a capacious nest in large trees, a whole colony sometimes occupying one tree. Usually two broods are raised in one season.

The nests are built near the tops of the trees in well protected places, and where the heronry is well placed and safeguarded, the birds return from year to year to it. As a rule, the nests are bulky, rudely built, platform-like structures, often a foot and a half to two feet in diameter. They are built of sticks and weeds, lined with leaves or other soft materials.

The usual number of eggs in a clutch is three, though four and even sometimes five are said to be found. They are of a pale dull green color.

Notes.—It feeds chiefly on frogs and small fish. It has a deep, sonorus call note which is frequently heard as the bird passes overhead.

POND HERON.

ARDEOLA BACCHUS (BP.)

Description.—Length 19 inches.

Bill, base blue, middle yellow, tip black. Legs yellow. Iris golden yellow.

Breeding Plumage Bare skin about the eyes greenish. Back ~~greenish~~ ^{and some of scapulars dark slate gray}, grey, or reddish.

Head, neck and crest dark chestnut brown. ~~Front of the neck varied with brown, yellow and white.~~ Rest of plumage white.

Breast plumage with white subs.

In *breeding plumage*, the adults wear a beautiful greenish, bronze-colored aigrette of long hairy feathers covering the whole back.

Non-breeding Plumage ~~In immature birds~~, the chestnut of the head and neck is replaced by brown streaked with buff. The breast is white streaked brown, the upper parts are various shades of brown, the scapulars being obscurely streaked with buff.

Distribution.—Cochin China and most of China. This bird is a summer visitant in the Yangtse Valley.

Nest and Eggs.—Several large nesting colonies of this heron have been visited along the south bank of the Yangtse River, near Kiangyin. One was in a large bamboo grove at the rear of a village. The nests were mingled with those of a colony of the Azure-wing Magpie. Another was in a group of large trees on the streets of a village, and still another within the city of Kiangyin. The nests were loose platforms of sticks placed among the small outer branches of the trees from 15 to 30 feet from the ground. The eggs are a light apple-green color, from two to four in a clutch.

Notes.—This heron is constantly seen in the paddy fields during the summer. In flight it appears quite white as the under parts are chiefly in view. Once it alights, the colors of the back and neck so blend with its surroundings as to cause the bird to disappear almost instantly.

LITTLE BITTERN.

IXOBRYCHUS SINENSIS (GM.)

[*Ardetta sinensis* (Gm.)]

Description.—Length $13\frac{1}{2}$ inches.

Bill yellow in male; in female fuscous above, white below. The skin at the base of the bill is yellowish-green in both sexes. Legs are yellowish green; tibia completely feathered to the joint; inner toe longer than the outer one. Iris yellow.

Male.—Crown black. Neck behind rufous, in front yellowish. Back pale brown, wing coverts greyish yellow. Breast and abdomen yellow. Feathers of under parts more or less marked with brown. Axillaries are buffish-white. Wing and tail quills greyish black. There are 10 tail quills.

Female.—She is similar to the male except the crown and some streaks on the forehead are bluish-slate and there is a collar of black feathers edged ochraceous at the base of the neck,

Distribution.—India, Philippines, Japan, and all of China. This bird is a summer visitant in the Yangtse Valley.

Nest and Eggs.—While it may at times build its nest in trees or bamboos at a moderate height from the ground, yet it seems to prefer to

also buff edges
feathers of base
scapulars and
dark buff base
down most
chin and thro

nest among the tall reeds which are so abundant along the water courses. It makes a rather large nest of dry rushes and reed leaves which are tightly interwoven with the reed stems which support it. The clutch usually consists of four, oval, greenish-white eggs.

CINNAMON HERON.

IXOBRYCHUS CINNAMOMEA (GM).

[*Ardeetta cinnamomea* (Gm.)]

Description.—Length ¹¹⁻¹³~~22~~ inches.

Bill yellow with black tip. Legs greenish yellow. Lores and eyelids bare and yellow, *in females - purplish in r*

Male.—Head and upper parts rufous brown with a slaty blue tinge to the crest. Lower parts ochraceous buff. Indistinct black streak from throat to breast (more distinct in the female). Patch of black feathers margined ochraceous in front of wing.

Female.—differs from the male in having bluish slaty tinge to all the rufous upper parts, deepest on the top of the head and lightest on the rump and tail; and a mottling of buff and black on the wings and lower parts.

Distribution.—India, Malaysia, Japan and China. A summer visitant in this part of the Yangtse Valley.

Nest and Eggs.—This heron nests among the reeds along the streams or in marshy places. The eggs, five or six to a clutch, are oval and a dull white in color, lacking the bluish tinge, though they sometimes have it.

Notes.—This is one of the night herons, remaining concealed during the daylight hours in the thick vege-

tation of the swamps or streams, from which it can be readily flushed, especially late in the afternoons.

BLACK-CROWNED NIGHT HERON.

NYCTICORAX NYCTICORAX (L).
[*Nycticorax griseus* (L).]

Description.—Length 22 inches.

Bill very heavy and arched, black inclining to yellowish at the base. Legs pale yellowish green. Iris deep reddish orange. Crown, back, and scapulars glossy greenish black. Forehead, sides of head, and under parts whitish. Lower back, wings, and tail ashy grey. Two or three long white plumes forming a crest. *The young birds* are quite different in plumage from the adults. They are "greyish brown, streaked and spotted yellowish white over the whole body, slightly lighter below."

Distribution.—Cosmopolitan. It is a resident in the Yangtse Valley.

Nests and Eggs.—These night herons nest in colonies in trees, a number of the nests, built close together, may be found in one tree. The nest itself is little more than a rough platform of loosely piled twigs. The eggs are a uniform pale, dull-blue, and there are usually from four to six in a clutch. A large colony of these birds has been nesting in the South-east corner of the city of Soochow for quite a number of years and they regularly return to the same place each year if they are not disturbed. First the heronry was located in the tall trees inside of a large high-walled

enclosure and they used this for several years consecutively until they were driven away by some one shooting at them, presumably for their plumes. They then moved about half-a-mile to another enclosed grove around a Confucian temple. At present they still hold these quarters, but we noticed during the summer that the Chinese boys were gathering these eggs by the wholesale to eat. We have never noticed this before.

Notes.—These birds are rightly named, for they sit around in the trees through the day and start out about nightfall to hunt for their food in the paddy fields. Their hoarse "quark, quark" can be heard at all hours of the night out of the dark sky as they pass over and this has given rise to many strange superstitions among the Chinese.

GREAT BITTERN.

BOTAURUS STELLARIS.

Description.—Length 28 inches.

Bill greenish yellow. Feet and legs yellowish green; the inner toe is longer than the outer. Iris reddish yellow.

"Crown and nape black; upper plumage generally ochreous buff, with black or dark brown markings which cover the greater part of the back and scapulars and become broken into angulate cross bars on the wing coverts, rump, and tail, and into more distant narrow angulate bars on the sides of the neck; quills rather irregularly barred black and rufous; a broad blackish stripe runs back from the gape. Chin and throat whitish with a median tawny band; rest of lower

plumage yellowish buff with brown mottled streaks on the fore neck, and black on the breast and abdomen."

Distribution.—Europe through Asia to Japan. It is found all over China, nesting in Fokien and the South and wintering in the Yangtse Valley.

The following Herons also occur in the Yangtse Valley.

Pyrherodias purpurea (L), Eastern Purple Heron.

Herodias alba (L), Great Egret.

Mesophoyx intermedia (Wagl.), Lesser Egret.

Egretta garzetta (L), Little Egret.

Bubulcus coromandus (Bodd.), Cattle Egret.

Dupetor flavicollis (Lath.), Yellow-necked Heron.

Nannocnus eurythmus (Swinhoe), Von Schrenk's Little Heron.

Butorides javanicus (Horsf.), Little Green Heron.

Family, Ciconiidae, The Storks.

The bill of the Stork is rounded and more or less curved downward. The front toes are connected at the base by a web, but there is no comb on the middle toe nail as in the Herons, which they somewhat resemble. The leg is bare, well up to the thighs. The wings are large, and the short rounded tail is composed of only 10 feathers. In flight the neck is held straight forward and not folded as with the herons.

Only three members of this family are likely to be met with in the Yangtse Valley.

Ciconia nigra (L.), Black Stork.

Leptotilus javanicus (Hors.), Smaller
Adjutant.

Ibis leucocephalus (Penn.) Painted
Stork.

Family, Threskiornithidae, The Ibises.

Ibises, in general, may be distinguished from Storks by their smaller size, and in the case of the one species found in the Yangtse Valley, by the large crest and the deeply curved bill. The bill is rather slender, cylindrical and evenly bent downward. It is soft except at the tip, and the nostrils are slits placed in a deep narrow groove, which extends quite to the tip. The legs are thick, strong and of moderate length. The toes are long, the front ones connected by a web, and the claws are long and slender. The wings are rather long and pointed, and the tail of 12 feathers is short and square.

Nipponia nippon (Temm.), Japanese
Crested Ibis is a summer visitant in the Yangtse Valley.

Family, Plateleidae, The Spoonbills.

Spoonbills are readily distinguished by their characteristic bill from which they receive their common name. The bill is long and nearly straight, flattened and narrow in the middle, but expanded into a broad spoon-shaped tip. The head is partially or entirely bare, and the nostrils are longitudinal grooves. The wings are large reaching about to the end of the tail, which is short, even, and composed of 12 broad rounded feathers. Of the seven known species of Spoonbills, only two are found in China, they pass the Yangtse on migration.

Platalea leucorodia Linn., Great Spoonbill.

Platalea minor T. & S., Lesser Spoonbill.

ORDER ANSERIFORMES, GOOSE-LIKE BIRDS.

This order is distinguished by having four toes, the front three fully webbed, tarsi not strikingly flattened as in the Grebes; the tail is always well developed; bill with tooth-like projections, fluted ridges, or gutters along the sides. In some species the bill is more or less tapering to a point in all, however, the upper mandible terminates in a nail.

This cosmopolitan order embraces but one family, the *Anatidae*, which is divided into several clearly marked sub-families, under which they can be most conveniently described. The whole family numbers about 210 species, of which 37 representatives are found in China.

The family is divided into five sub-families :—

1. *Cygninae*, the Swans ;
2. *Anserinae*, the Geese. These birds have the hind toe not lobed.
3. *Anatinae*, the River Ducks. These birds have the hind toe narrowly lobed.
4. *Fuliginae*, the Sea Ducks ;
5. *Merginae* Mergansers. These birds have the hind toe broadly lobed.

Sub-Family, *Cygninae*, Swans.

Swans are the largest members of the family, and are technically distinguished by having the lores bare, all the other members of the family having them feathered. The neck is as long or longer than the body, the

number of vertebrae in it varying from 23 to 30, as compared with 20 in other Anseres.

Swans feed from the surface of the water by tipping up, or by simply immersing their long necks and heads. Their food consists largely of vegetable matter, but they also eat small mollusks.

They migrate in V shaped flocks, much like the Geese.

The following forms are rather rare winter visitants:—

Olor cygnus (L), Whooper or Wild Swan.

Olor bewicki minor (K. and B.,) Bewick's Swan.

Sub-Family, Anserinae, Geese.

Geese may be recognized by having proportionately longer legs than ducks, the tarsus being longer than middle toe without the nail, and the scales in front hexagonal instead of narrow like the ducks. They differ from the Swans in having the neck always shorter than the body, although longer than in most of the ducks.

Geese are vegetarians, frequently visiting the land to nip the herbage. When on the water they feed by tipping up like the River Ducks. In migration they fly in a V shaped flock, led by an old gander.

THE WHITE-FRONTED GOOSE.

ANSER ALBIFRONS (SCOP).

Description.—Length 27 inches. Bill pale red, nail white. Iris pale brown. Legs orange. There is a

white band on the forehead which does not reach as far back as the eye and sometimes a white spot at the base of the lower mandible. The upper parts are brownish ash. The breast is brownish white, and there are usually some irregular black

marking on the upper breast. In young birds the white on the head is either absent or brownish white, and there are no black markings on the breast.

Distribution.—It occurs throughout the Palaearctic region, wintering south through China. It is more common in South and Central China than in the North during the winter. It breeds in the far North.

LESSER WHITE-FRONTED GOOSE.

ANSER ERYTHROPUS. (L.)

Description.—Length 21 inches. Bill pale. Legs yellow. Iris brown.

This goose is very much like the White-fronted Goose: it differs from that one in that it is smaller in size; the bill is much smaller; the plumage is darker in coloring, and that the white on the forehead covers a larger area. The distinguishing mark of this species is that the white of the forehead extends as far back on the top of the head as the eye.

Distribution.—Europe and Asia. Common throughout China in the winter, and especially on migration when large numbers cross the country to and from the breeding grounds in the tundras of Siberia.

BEAN GOOSE.

ANSER FABALIS (LATHS).

[A. segetum (M. and W.)]

[A. serrirostris (Gould).]

Description.—Length 32 inches. The bill is orange-color in the middle, black at the base, on the edges, and on the nail. Iris dark brown. Legs and feet orange yellow.

The whole plumage is brownish grey, dark above and lighter below.

The coloring of the bill is the distinguishing mark of the species.

Distribution.—Europe and Asia, breeding in the far North. These geese are common all over China during the winter season.

Notes.—They feed in the fields, often doing great damage to the young wheat, and rest in large flocks on the large mud-flats and sand-bars of the rivers.

GREY LAG GOOSE.

ANSER CINEREUS (M. & W.)

Description.—Length 32 inches. Bill flesh-colored, with a white nail. Iris brown. Legs and feet same color as bill.

Head, neck, and upper parts ashy brown. Under parts light bluish grey with a small number of black spots.

Distribution.—Europe and Asia to India. It breeds in Central Asia and Southern Siberia. It is a winter visitant in the Yangtse Valley.

PYGMY GOOSE. (COTTON TEAL)

NETTAPUS COROMANDELIANUS (Gm.)

Description.—Length 13 inches. In summer the bill of the male is

black ; in the female, and in the male in winter, it is brown above and yellowish below. Iris bright red in the male, brown in the female. Legs and feet black and yellow in the male and greenish yellow in the female.

Male is brown on the forehead and crown ; the sides of the head, neck and lower parts are white, vermiculated with brown on the sides of the body. There is a collar of glossy greenish black which is lost in winter. The upper parts are glossy greenish-brown, barred white on the tail coverts. There is a broad white bar across the wing and a black tip to the primaries.

Females have a brown line through the lores and eyes and there is more or less brownish tint and brown marking on the white parts. The wings are entirely brown. There is no collar and no gloss on the upper parts.

Immature birds resemble the females.

Distribution.—India, East Indies, South and Central China. It is a summer visitant in the Yangtse Valley.

Nest and Eggs.—Jerdon thus describes the breeding habits of the Indian bird :—" It breeds generally in old trees, often at some distance from the water, occasionally in ruined houses, temples, old chimneys and the like, laying eight or ten small white eggs. "

Notes.—This bird seems to prefer marshy streams, or even ditches which run through the paddy, to the larger open waters. It is frequently seen in this part of the Yangtse Valley during the summer months.

There is also another Goose which has been recorded from this part of China :—

Cygnopsis (or Anser) cygnoides (L.),
Swan Goose.

Sub-family, Anatinae, River Ducks.

The ducks of this sub-family are marked by the absence of a lobe on the hind toe. Another characteristic is their habit of tipping up to feed like the domestic duck. Their food is chiefly mollusks, crustaceans, insects and their larvae, seeds and roots of aquatic plants.

They are for the most part northern breeding birds, only one of the species recorded from the Yangtse Valley being known to nest here (The Yellow Nib Duck, *P. zonorhyncha*).

MALLARD DUCK.

ANAS PLATYRHYNCHOS. (L)

(*A. boschas* L.)

Description.—Length of male 26 inches, female 22 inches.

Male.—Bill greenish. Iris dark brown. Legs orange. Head and upper-neck brilliant iridescent green with a narrow white collar. Upper back chestnut brown, lower back black. Upper breast chestnut brown. Abdomen greyish white. The outer webs of the secondaries form a speculum of rich purple edged with black. Upper and under tail coverts black.

Female.—Bill yellowish-orange with a black nail. Legs yellowish-orange. The whole plumage is yellow or light brown streaked with darker. The speculum is green above, black below, and edged with white.

Distribution.—Circumpolar, it is widely distributed in Europe, Asia, and North America, and is also found as far South as North Africa and Jamaica. It is a common winter visitant on the lakes and ponds of the Yangtse Valley.

Notes.—This well known duck is interesting not only as being the object of the sportsman's search, but also as being the form of wild duck which has been domesticated and made of service on our yards. It is believed to be the ancestral stock from which most of our domestic breeds have come.

YELLOW NIB DUCK.

POLIONETTA ZONORHYNCHA
(SWINHOE)

Anas zonorhyncha (Sw.)

Description.—Bill black, tipped with yellow. Feet orange-yellow. The general color of the plumage is brown, in this it is like the female Mallard, from which it is readily distinguished by the bill. The female Mallard's bill being yellow with a black tip, while in this duck it is black with a yellow tip. It is somewhat larger than the Mallard and has a longer neck which may be readily noted when on the wing. The lower parts are somewhat darker than in the female Mallard and there is a distinct light streak on each side of the head over the eye. The sexes are alike.

Distribution.—Across Japan and China to Mongolia and Eastern Siberia. This is one of China's resident ducks which sometimes remains to breed in the Yangtse Valley, though it is much more common in winter, when it mixes freely

with the Mallards and other river-ducks. Pairs have been seen flying together in summer along the coast in Shantung and in Southern Kiangsu, but no nest have been found, Both young birds and eggs have been taken in Swatow.

This duck commonly breeds further South than most of the others; nests are often seen in Chihli and Shansi Provinces. Pairs of these ducks have also been seen flying together in the Summer along the coast in Shantung and in Southern Kiangsu at Kiangyin, but no nests have been found. Both young birds and eggs have been taken in Swatow.

Notes.—This duck has also been tamed by the Chinese and its offspring are often seen in domestic flocks.

GREEN-WINGED TEAL. (Common Teal)

NETTION CRECCA (L).

(*Nettium crecca* (L).)

(*Querquedula crecca* S-G.)

Description.—Length $14\frac{1}{2}$ inches. Bill is dark lead color, nearly black, the tip black. Legs lead grey, with a tinge of brown. Iris pale hazel brown.

Male. Crown and cheeks chestnut. A deep-green stripe through the eye and down the side of the neck. Breast grey and spotted with black, frequently more or less washed with salmon pink. Abdomen white. Back and sides of breast vermiculated with black and grey. Speculum green bordered with buff. Under tail coverts buff, *at sides black in*

Female is a mottled brown without the highly colored head. It is a much

middle.

more soberly colored duck, but it has the characteristic green wing spot.

In both sexes the outer webs of the outer secondaries are velvet black and those of the three inner ones metallic emerald green. The female dress is assumed by the drake in July and is kept until October.

Distribution.—Europe, North Africa and Asia. It is a very common Winter visitant to the Yangtse Valley but nests further North.

Notes.—These little ducks are often found even on the small ponds in thickly peopled cities. They seem much tamer than the larger river-ducks, when startled, however, they rise directly from the water and are off with remarkable swiftness. The flavor of the flesh of this bird is quite delicate and it is highly prized as food by all who know it.

SPECTACLED TEAL.

NETTION FORMOSUM (GEORGI).

(*Eunetta formosa* Bp.)

Description.—Length about 16 inches. Bill black. Iris brown. Legs greenish slate-color.

Male has a black crown, each feather bordered with yellow. Cheeks buff, with a white streak above the eye and a black stripe through the eye extending diagonally backwards and downwards, meeting the black of the throat on each side. Back of the head and neck have four concentric stripes buff, black, green, and buff. Upper breast mauve, lighter below and marked with small black spots. Abdomen white, finely barred. Back grey and reddish brown

somewhat vermiculated. The tertials are elongated, acuminate, chestnut on the outer ~~shaft~~^{web}, black in the center, and whitish on the ~~inside of the shaft~~^{inner web}. The speculum is brown, black, green, and white. The greater wing coverts are tipped with chestnut buff.

The *female* has the chin and throat white as are also spots on the side of the head. The rest of the head and neck are mottled black, brown, and buff. The remainder of the body is similar to the male, but darker.

Distribution.—Eastern Asia. It is very common in the Yangtse Valley on migration, both Spring and Fall, but very few seem to remain for the Winter.

FALCATED TEAL.

EUNETTA FALCATA (GEORGI.)

Description.—Length about 20 inches. 'Bill black in the male, with a greenish tinge in the female. Iris brown. Feet and legs drab tinged with olive.'

Male—The head and neck are green with an occipital crest of the same color. The neck has a white collar and the throat is white. The breast is grey with dark crescentric markings, darker above and lighter below. The back is vermiculated with black and grey. The tertials are dark green and grey, much elongated, curved like a sickle downwards about the end of the tail. Speculum dark green. The greater wing coverts are grey shading to white at the tips.

Distribution.—This is an Asiatic species though it is occasionally found in Europe. It passes along the China

coast each Spring and Fall, spending the Winter in the Yangtse Valley and further South. While not abundant it may frequently be seen on the large lakes of the interior. It is often taken on the Great Lake. It breeds in Siberia.

Notes.—A male very slightly wounded in the wing was brought home to Kiangyin during the Winter and became quite tame, taking his place among the domestic fowls. His wing healed entirely but as the feathers had been clipped he was unable to fly for a time. Later when new ones had grown, he followed the Spring migration to the North.

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The following also have been reported from the Yangtse Valley :—

Dendrocygna javanica (Hore)
Lesser Whistling Teal.

Tadorna tadorna (L.), Sheldrake.

Casarca ferruginea (Pall.), Ruddy Sheldrake.

Aix galericulata (L.), Mandarin Duck.

Mareca penelope (L.), Widgeon.

Daifila acuta (L.), Pintail Duck.

Chaulelasmus streperus (L.), Gadwell.

Querquedula querquedula (L.), Garganey Teal.

Spatula clypeata (L.), Shoveller.

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Sub-Family, Fuligulinae, Sea Ducks.

Sea Ducks are distinguished by the presence of a ^{web} or lobe on the hind toe. They are open water ducks, frequenting large lakes, bays, and sea coasts. Their food consists chiefly of mollusks, crustaceans, and the seeds and roots of aquatic plants. They feed

not by tipping up, as in the previous group, but, by diving, often to a surprising depth.

They are northern breeders, seldom nesting south of the circumpolar regions.

GOLDEN EYE.

CLANGULA CLANGULA (L).

[C. glaucion (Sw.)]

Description.—Length 18-19 inches, Bill short, bluish black. Iris golden yellow giving the bird its popular name. Legs yellow.

The head is quite large for the size of the bird and has a small crest. The crown and neck are black with green reflections. There is a white spot at the base of the bill. The feathering on the side of the upper mandible does not approach within half an inch of the nostrils. The lower neck and breast are white and the sides are dark grey. The back is black. The wing coverts are white with black bases. The secondaries are mostly white and the axillaries dark.

The *female* is rusty brown above and lacks the white face-spot. Underparts are white. The male takes on the female dress during the summer.

Distribution.—Circumpolar, breeding in the sub-arctic regions. Quite common in Winter in the Yangtse Valley usually in small groups or mixed with flocks of other ducks.

The following are less common but have been taken in the Yangtse Valley:—

Marila fuligula (L.), Tufted Duck.

M. baeri (Radde), Eastern White-eyed duck.

M. ferina (L.), Pochard.

M. marila (L.), Scaup.

M. mariloides, Eastern Scaup.

Oidemia fusca (L.), Velvet Scoter.

O. carbo (Pall), Eastern Velvet Scoter.

Sub-Family, Merginae, The Mergansers.

The bill of Mergansers is very long, narrow, and rounded, with numerous tooth-like projections along the sides. They are fish-eating ducks, their serrated bills enabling them easily to hold their prey, which is pursued and caught under water. They swim rapidly, and excell all other ducks as divers. When suddenly startled they may rise directly from the water, but usually they pat the surface for some distance with their feet, and rise against the wind. Their flight is strong, straight, and swift.

Of the nine recognized species of Mergansers, three are found in the Yangtse Valley.

THE SMEW.

MERGELLUS ALBELLUS (L)

[*Mergus albellus* (L)]

Description.—Length 17 inches. Bill, legs, and feet lead grey. Iris reddish brown. Head and neck white with the exception of a black patch around the eye, and a black stripe on the crown and down the back of the neck including the crest. Back mostly black. Tail grey. Greater wing, coverts have two narrow white bars. Secondaries black tipped with white. Flanks vermiculated with grey. Under parts white.

The *female* has the head and neck for the most part reddish brown ; back greyish brown, otherwise like the male.

The *male* assumes the plumage of the female in June and retains it until the Autumn.

Distribution.—Europe and Asia. It is a Winter visitant and fairly common in the Yangtse Valley. It is usually found singly or with the smaller ducks on the inland pools and marshes.

MERGANSER.

MERGUS MERGANSER L.

(Mergus Castor L.)

Description.—Length twenty six to twenty seven inches. Bill long, narrow, hooked, serrated, and vermilion in color. Legs red. Iris carmine red.

Male.—Head and neck black with decided greenish reflections, and with a short crest. Breast with a rosy flush, lower down white. Upper back black, lower back grey. Primaries black, secondaries and tertials white bordered with black. Greater wing coverts grey tipped with orange, lesser ones white.

Female has head and neck reddish brown. A longer crest. Breast grey, back dark blue grey. Lesser wing coverts grey.

This is the largest of the Mergansers and may be distinguished by the white secondary quills with completely concealed dark bases on the outer webs.

Distribution. — ~~Circumpolar and~~ Widely distributed over ~~North America~~, Europe and Asia. A Winter visitant and quite common in the

Yangtse Valley. They are usually seen singly or in small groups on the inland pools and marshes.

Notes.—Its call is a 'low whistling cry' though when several are resting together on the water, they frequently quack much like the large river-ducks.

Mergus serrator L., Red-breasted Merganser is a less common Winter visitant in the Yangtse Valley.

ORDER, FALCONIFORMES, FALCON-LIKE BIRDS.

Typically these are birds of robust size with powerful wings which enable them to pursue and capture other birds or swift-moving animals. Most of them have short, but very strong bills with strongly arched tip and sharp cutting edges. The feet are strong, provided, in most cases, with long, curved, sharp claws. In those which feed on carrion, however, the claws are often weaker and more blunt.

Another distinguishing feature is the cere, which is a peculiar membrane sheathing the base of the upper mandible.

There are only two other important groups of birds possessing the hooked bill and the cere, namely the Owls and the Parrots.

Family, Falconidae, The Falcons.

In the Falcons, the hind toe is shorter than the lateral pair. The bill is strong, broad at the base; the upper mandible has a prominent tooth and the lower one a corresponding notch. The nostril is a small round or

oblique opening, with a bony ribbed margin and a central tubercle. The wings are long and pointed with never more than two primaries emarginated.

This family is further broken into several groups or sub-families more or less sharply divided, which need only be mentioned. The true Falcons have the middle toe very long, never much shorter and sometimes longer than the tarsus, and the nostril opening round. The smaller Kestrels have the tarsus decidedly longer than the middle toe, the nostril opening round, and the sexes differing widely in coloration.

The Falconets are the smallest of the family, and have the nostrils oval.

PEREGRINE, (PEREGRINE FALCON.)

FALCO PEREGRINUS TURNSTALL.

Description.—Length, male fifteen inches; female seventeen inches. Beak bluish: cere and claws yellow. The wings reach to the end of the tail which is rounded. Iris dark brown.

Plumage silvery grey above with band and spots of darker color on every feather. Head, cheeks, and mustache black. Throat and all parts below white, with black streaks on the breast, spots on the abdomen and transverse bars on the flanks, legs, and under tail coverts. Tail brown barred with whitish.

The *young* are entirely reddish below, with long black spots.

Distribution.—Cosmopolitan. This bird is a resident in the Yangtse Valley.

Nest and Eggs.—Hudson writes thus of the European bird; usually "it makes no nest, the eggs being

deposited in a slight hollow scratched in the soil on ledge of a cliff. When it breeds in a tree it makes use of the deserted nest of some other bird. Two to four eggs are laid, yellowish white in ground color, mottled and spotted with reddish brown and orange brown."

Notes.—The cry of this bird is strong and sharp and is usually given when the bird is on the wing.

This falcon is commonly used by the hunters around Kiangyin for chasing pheasants. Beaters raise the bird from cover and then the falcon is immediately released for pursuit. The hunters all follow on foot. The falcons frequently catch their prey and so far as we have seen only hold it on the ground until the hunters come up. They then open the bird and feed the heart, liver, etc., to the falcon. We have rarely seen the falcons tear a bird seriously. The hunters claim that it is impossible to train the falcons to obey or come at their call.

HOBBY.

FALCO SUBBUTEO L.

Description.—Length of female 13 to 14 inches; male somewhat smaller.

"Bill black or bluish-black, darkest at the tip, blue at the base. Cere yellow. Legs greenish yellow. Iris reddish brown or orange."

"The plumage of the upper parts is dark slaty grey, becoming darker to black on the head. The throat is white. The breast is white marked with longitudinal black stripes. The hights are uniformly rufous. The female has the colors less bright and the markings broader."

Distribution.—Northern Europe and Asia. It is a summer visitant in the Yangtse Valley.

Nest and Eggs.—The Hobby usually builds its nest high up in trees, frequently making use of the deserted nests of other birds such as the crows or magpies.

There are generally three or four eggs in a clutch. They have a reddish white or white ground color which is so thickly blotched, speckled or stippled over with shades of red as to entirely hide the ground color.

Notes.—It is a very courageous bird and will attack the kite or any other birds that may come about its nest during the breeding season. Its food consists largely of dragon-flies, beetles, etc., and also the smaller birds such as sparrows, buntings, larks, and other small birds.

MERLIN.

FALCO AESALON TURNSTALL.

(*Falco regulus* Pall.)

(*Aesalon regulus* Turnst.)

Description.—Length about ten and one half inches. Bill bluish. Cere and legs yellow. Iris brown.

Wing does not reach the end of the tail. Two outer wing quills with inner webs emarginate near the tip. Neck yellowish red, encircled with brownish ring, spotted. To be recognized by its small size, blue grey color of its upper parts, every feather of its head and back being marked with brown in the center.

Chin and throat white, or greyish, washed with yellow, spotted with brown. Breast dull reddish, sometimes

darker. Tail banded with black, but number of bands variable.

Female larger. Breast spots larger than those of male. Back brown mixed with rufous. Tail greyish brown.

Distribution.—Europe and Asia. Winter visitant in the Yangtse Valley.

DARKER KESTREL.

CERCHNEIS SATURATUS BLYTH.

(*Falco tinnunculus saturatus* (Blyth).)

Description.—Length thirteen and one half to fifteen inches. Bill bluish: Cere and legs yellow.

Head ash-grey feathers streaked with darker. A blackish oblique streak near the angle of the mouth. Neck bluish. Chin and throat whitish and unspotted. Breast "pale yellowish orange red," each feather streaked with darker and with a spot near the end. Upper back cinnamon red, shaft of each feather grey with spot near the end. Tail grey, but with a broad subterminal band.

Female has larger spots and the tail has ten or more dark bars.

Distribution.—Europe and Asia. Resident in this part of the Yangtse Valley.

Nest and Eggs.—This bird sometimes builds in holes making a rough nest, or it may take possession of the deserted nest of a crow or magpie. Like the other kestrels it usually lays four or five eggs, the ground color of which is white and they are variously marked, blotched, mottled, or speckled, with several shades of red from pale red to crimson.

The following have also been seen in the Yangtse Valley :—

Falco peregrinator (Sundev.),
Sháhin Falcon.

Cerchneis tinnunculus (L.), Japanese Kestrel.

Erythropus amurensis (Radde).
Eastern Red-footed Falcon.

Microhierax melanoleucus (Blyth.),
White-legged Falconet.

**Family, Buteonidae, Kites, Buzzards, Eagles,
Hawks, etc.**

This is a very large and rather mixed family, differing widely both in habits and appearance. As a rule they are large birds, and while some of them possess remarkable powers of sustained flight, they are usually slower in flight and less bold and fierce in hunting their prey than the Falconidae.

The family is divided into many groups or sub-families which can best be taken up individually.

Sub-Family, Pandioninae, Osprey.

The Ospreys, or Fish-hawks, stand apart as a separate group whose relationships have long been in dispute. The outer toe is reversible, thus forming a distinct type among Diurnal Birds of Prey, and on account of this some have regarded them as a connecting link with the Owls.

Several species have been described at various times, but it is now generally accepted that there is only one species varying in different parts of its range into well marked sub-species.

OSPREY.

PANDION HALIAETUS (L).

Description.—Length about 22 inches. Bill black, cere, gape and eyelids dull greenish blue. Feet and legs pale yellowish green, claws black. Iris yellow.

Head and neck are white, crown and nape streaked brown. A brownish band through each eye and down the sides of the neck. Upper parts dark greyish brown. Tail brown, more or less distinctly barred. Wing quills black. Under parts white with brown streaks in the breast.

Young birds have more barring on the tail and little or no brown on the breast.

Distribution.—Cosmopolitan. Resident in the Yangtse Valley. Various sub-species have been described in different parts of the world.

Nest and Eggs.—The location of the nest is quite varied, usually in the tops of tall trees, but where it is protected it may build close to the ground or even on the ground. The nest is built of large sticks, twigs, etc., and lined with softer material, as grass, fibrous bark, moss, etc. Eggs, usually two, sometimes four, in a clutch, are extremely variable in color. Sometimes dull white to chocolate brown unmarked, but usually they are yellowish white, heavily marked brown especially at the larger end.

**Sub-Family, Milvinae, Kites, Buzzard Eagles,
Sea Eagles.**

These birds, differing widely in outward appearance, are associated for anatomical reasons.

The Kites are of moderate size with long pointed wings, and more or less forked tails. They have a rather weak bill without any notch ; the tarsus is short, and the claws long and sharp.

The Buzzard Eagles have a large bill sharply bent near the tip, nostrils oval provided with a membrane above. Wings very long extending beyond the tail. Tail of moderate length, slightly rounded at the end.

The Sea Eagles are much larger than either of the foregoing. They have the lower tarsus naked all around, and lanceolate feathers on the head and neck. The bill is very large and powerful, and the feet are enormously heavy and strong. The Bald Eagle or American Eagle belongs to this group.

BLACK-EARED KITE.

MILVUS MELANOTIS T. AND S.

Description.—Length twenty-six inches.

Beak dark ; cere dull green ; legs greenish ; iris light brownish yellow. Tail forked, tarsus feathered half its length. Auriculars dark brown. Plumage brown with suggestions of purple reflections, lighter on head and neck where every feather is marked in the center with a black streak. Tail lightly barred with brown.

The *young* are generally lighter in color, the tail whitish at its end.

When flying overhead it is most readily distinguished by the forked tail and a large light spot on the under side of the wing clearly visible in flight.

Distribution. — ~~Eastern Europe~~, Siberia, and China generally. A very common resident in the Yangtse Valley.

Nest and Eggs.—These birds build large, coarse nests, usually high up in tall trees. The outer part is composed of sticks roughly laid together and lined with grasses or any available rubbish.

A pair of these kites have been nesting for several years on the tall tower of the Soochow University

They return regularly each year in spite of the destruction of the nest each time.

The eggs in a clutch vary from 1 to 3 in number, 2 being the usual number. Greenish white is the ground color and it is variously marked with several shades of brown or at times even with violet.

Notes.—One of the most familiar of Chinese birds, seen soaring high in the air, or swooping about the settlements on the keen lookout for offal or scraps of almost any description.

These other representatives of this sub-family also occur in the Yangtse Valley :—

Haliastur indus (Bodd.), Brahminy kite.

Butastur indicus (Gm.), Grey-faced Buzzard-Eagle.

Haliaetus albicilla (L.), White-tailed Sea Eagle.

Sub-Family, Aquillinae, the Eagles.

The true Eagles form the largest and most famous subdivision of this family. Their wings are long, and the tail of moderate length, and slightly rounded. The tarsus is feathered to the toes. The claws are large, sharp, and curved.

The following Eagles have been observed in the Yangtse Valley, though none of them are very common :—

Aquila heliaca (Sav.), Imperial Eagle.

A. maculata (Gm), Large Spotted Eagle.

Nisaetus fasciatus (Vieill), Bonelli's Eagle.

Spizaetus nipalensis (Hodgs), Hodgson's Hawk Eagle.

Sub-Family, Vulturinae, the Vultures.

Vultures are large birds with strong feet, blunt claws and bare heads and necks. Their nostrils are imperforate. The hind toe is shorter than the shortest front one. They all feed to some extent on carrion.

The Vultures are divided into 7 genera and 17 species. Only 3 species are found in China, and only one reaches the Yangtse Valley.

Our one species is *Vultur monachus* L., Cinereous Vulture, and is not often seen by the ordinary bird lover.

Sub-Family, Circinae, the Harriers.

The Harriers have very long slender legs and a slight elegant form. They have a disc of stiff feathers about the head, soft plumage, and highly developed ears, as in the Owls. They are especially remarkable for the great diversity of coloration in the plumage of the male and female, an unusual thing among Birds of Prey.

China has 6 species, all of which reach the Yangtse Valley.

HEN HARRIER.

CIRCUS CYANEUS SWINHOE.

Description.—Length for the male eighteen inches, the female twenty inches. Bill black; cere yellow. Legs long and yellow. Iris yellow.

Head and neck bluish grey. The head surrounded with a ruff of stiff feathers. Upper breast grey, below bluish white. Back grey. Tail white except two central rectrices, which are grey. Under surface of tail with five indistinct darker bars.

The pale bluish grey throat and breast form a distinguishing mark for the adult male.

Female is larger. Breast pale brown streaked with dusky in the middle of each feather. Back brown of varying tints. General appearance of this bird is brown, darker above and lighter below, variously streaked and mottled.

The *young* resemble the female and are much like the young of the Marsh Harrier (*C. æruginosus*), but the 1st and 7th primaries are nearly equal in length in the Hen Harrier, while in the Marsh Harrier the 1st is an inch or more longer than the 7th.

Distribution.—Europe and Asia. Common in China generally. It is a winter visitant in the Yangtse Valley.

MARSH HARRIER.

CIRCUS ÆRUGINOSUS (LINN.)

Description.—Length twenty to twenty-two inches.

Bill bluish black; cere greenish yellow. Legs yellow and very long and slender. Iris orange yellow.

Head, or crown only, pale or white. Upper neck has indistinct ruff of stiff feathers. Secondaries ash grey. Wings reach nearly to the end of the tail. General color of the plumage red brown.

At more advanced age, head and throat become ochreous yellow and tertiaries become grey.

The plumage varies considerably in different specimens.

Females similar to the males but a little darker.

Distribution.—Europe and Asia. Winter visitant in the Yangtse Valley. More common in North than in South China.

The following are also recorded as having been observed in the Yangtse Valley :—

Circus spilonotus Kaup., Eastern Marsh Harrier.

C. melanoleucus (Pennant), The Pied Harrier.

C. macrurus (Gmel.), The Pale Harrier.

C. pygargus (L.), Montagu's Harrier.

Sub-Family, Buteoninae, the Buzzards.

The name Buzzard, which in America has been commonly applied to the Turkey Vulture (*Cathartes aura*), is used in a broad sense for a group of large birds, of heavy, compact build, and rather sluggish habits as compared with other Birds of Prey.

Buzzards have been commonly placed next to the Eagles, with which they have many points in common, but, among other things, they differ in assuming the adult plumage after the first moult, while the Eagles require several years to acquire full plumage.

These three Buzzards are winter visitants in the Yangtse Valley:—

Buteo plumipes (Hodgs.), The Harrier Buzzard.

Buteo hemilasius, T. & S., White-tail Buzzard.

Archibuteo hemiptilopus (Blyth), Himalayan Rough-legged Buzzard.

Sub-Family, Accipitrinae the Sparrow Hawks.

This group is composed of very active birds, of small size but endowed with indomitable courage and dash. They have a slender graceful form, a small head, and a weak bill with a prominent tooth. The wings are short and rounded, and the tail is long and round at the tip. The legs are very long and slender, the tibia and tarsus being of nearly equal length. The middle toe is much lengthened.

SPARROW HAWK.

ACCIPITER NISUS (LINN.)

Description.—"Length of male 11½ to 13 inches. Bill bluish; cere and legs yellow. Toes black. Iris orange. The fully grown *male* has the plumage of the upper parts dark bluish grey except for a white spot on the nape. The cheeks, chin, and under parts are rufous barred with reddish brown. The tail is greyish brown and has from three to five bands.

The *female* is about two and one half inches larger than the male. The plumage of the upper parts is brownish, many feathers white at base, the nape is white; the primaries and tail are lighter than the rest of the upper parts. The under parts are greyish white with brown bars."

Distribution.—Almost cosmopolitan. Found all over China. A winter visitant in the Yangtse Valley, rather common from September to about April.

Notes.—This bird is also trained by the Chinese to serve as a means of catching smaller birds for them.

Astur cuculoides (Temm.), Temminck's Goshawk is a summer visitant and

Astur soloensis (Hors.), Horsfield's Goshawk,

Accipiter virgatus (Temm). Besra Sparrow Hawk, and

Accipiter gularis (T. and S.), Japanese Sparrow Hawk, pass the Yangtse Valley on migration.

ORDER, GALLIFORMES, FOWL-LIKE BIRDS.

Birds of this order all have four toes except in one family, the Turnicidae. The hind toe is small, and elevated above the others. The bill is short, stout and hard; the upper mandible is arched and more or less overhangs the lower, as in the domestic chicken. The legs are of moderate length, but are always strong, as these birds are mainly terrestrial, and depend on their legs both for escaping danger and for securing their food by scratching the surface of the ground.

Family, Turnicidae, The Bustard Quails or Hemipodes.

This is a small family of small birds, whose appearance at once suggests an immature Quail, their structural characteristics however would suggest a near relationship to the Rails. As

they are terrestrial in their habits, and usually found with the Quails, they are here included in the same group.

The most marked characteristic is the entire absence of the hind toe, except in one Australian Species, the true Quails always having four.

About 50 species are known, only one of which occurs in China, the remainder belonging to southern Asia, Africa and Australia.

BLANFORD'S BUTTON QUAIL.

TURNIX BLANFORDI BLYTH.

(*Turnix maculatus*)

Description.—Length 7 inches. "Upper mandible and tip of the lower brown, remainder of bill, feet, and claws ^{yellow} Iris white or yellowish white."

It looks like a small quail, but has only three toes by which it may be readily identified.

Crown dark brown. Cheeks pale yellow bordered with brown. There is sometimes a large rusty red nuchal spot. Back, black, red and ashy intricately mixed. Wing coverts light yellow with black spots. Breast bright rufous with many round black spots on the sides. Abdomen white.

Distribution.—All over China. A summer visitant in the Yangtse Valley.

Nest and Eggs.—The nests are very simple affairs, usually mere grass-lined depressions in the ground. The eggs of this bird have been described as having a 'very smooth and glossy texture; a greyish-white ground color, thickly speckled with reddish brown and purple of various shades over paler purple underlying spots; a pyriform-

ovate or peg-top shape.' There are four to a clutch.

Notes.—Its flight is slower and more rail-like than that of the common quail. Usually it is a shy bird passing its life in the thickets, but during migration it seems to become very bold or perhaps bewildered.

Family.—Phasianidae, Pheasants and quails.

This family is composed of birds with stout, compact bodies, short, rounded, and concave wings which fit closely to the body.

They are represented in the Yangtse Valley by two sub-families.

Sub-Family, *Perdicinae*, Old World Quails and Partridges.

This large group of some 25 genera and 150 species differs quite sharply from the American forms in having no serrations on the cutting edge of the lower mandible. On the other hand the line between them and the Pheasants (*Phasianidae*) is at best only an artificial one. The *Perdicinae* may be distinguished from the Pheasants by their short tails and wing quills, the first primary always being equal to or longer than the tenth.

Only two species of this family are found in the Yangtse Valley.

COMMON QUAIL.

COTURNIX *COTURNIX* (L.).

(*Coturnix communis* Bonnat.)

Description.—Length seven and one half inches. Bill greyish brown above, greenish blue beneath, tip yellowish. Legs, toes, and claws greyish yellow brown. Iris hazel.

Crown dark brown with lighter median stripe. Upper parts in general different shades of brown, conspicuously marked with pale yellowish pointed stripes, the feather also being finely barred with lighter brown. Throat pale brown generally, breast with darker bands, tints growing paler toward abdomen which is almost white. Breast feathers finely streaked with whitish.

Female lighter in color.

There is considerable variation in tints in different individuals.

Distribution. Europe and Asia. Common resident in the Yangtse Valley.

Nest and Eggs.—“A slight hollow in the ground, with little or no lining and sheltered by standing crops or grass” is the nest according to Ogilvie-Grant. The lining is often present and consists of bits of grass, dry straw and similar common things.

“Eggs eight to twelve in number, sometimes more, are laid; creamy white or buff, more or less boldly blotched and spotted with rich brown.”

Notes.—These birds are frequently met with feeding in small coveys, we have never seen a large one, along the grassy paths of the paddy fields or the grass covered grave mounds, but they sometimes take to very thick cover and are hard to get out.

Hudson has likened his three syllable, shrill, piping call, to the sound of the words, “wet my lips”, or “wet my feet,” according to the fancy of the hearer. This is a common call early in the morning and late in the afternoon in the country during the mating season.

The Japanese form (*Coturnix japonica*) is also sometimes found in the Yangtse Valley. It can scarcely be considered more than a sub-species; it differs from the common quail in having lanceolate feathers on the throat and upper neck.

BAMBOO PARTRIDGE, (BAMBOO CHICKEN).

BAMBUSICOLA THORACICA (TEMM).

Description.—Length 11 inches. Upper parts olive brown, spotted with reddish and darker brown, and mixed with white, feathers vermiculated. Throat rusty red. Large grey band across the breast and abdomen followed by one of rusty red. Rest of under parts buff spotted with black in front. Flanks marked with large blackish spots. Eyebrow stripe grey.

The *young* are very similar, but lack grey markings.

Distribution.—South and Central China, not passing north of the Yangtse River. Resident in the thickets among the hills up to 2,000 feet.

Nest and Eggs.—The nest is generally placed under a bunch of thick grass or a dense, small shrub. The eggs usually number from 7 to 12 in a clutch and are creamy brown in color.

Notes.—This bird is found chiefly in dense thickets and jungles and usually roosts in a tree. Except during the breeding season, when they live in couples, they are met with in small coveys, making a tremendous commotion when they are flushed.

In many respects they resemble the American Bob-white (*Colinus*) both in habits and appearance, though they

are distinctly larger, and take less to the open fields.

The *male* has a great variety of calls, some of them very loud. The cluck of the *female* closely resembles the resonant sound made by striking the hollow wooden "fish-head" used by the Buddhists.

Sub-Family, Phasianinae, Pheasants.

This family, though closely allied to the foregoing, may be distinguished by their larger size, elegant plumage, long tails, and by the first primary of the wing always being shorter than the tenth.

This family comprises about 20 genera, and upwards of 100 species of which ~~two~~²⁰ are found in China and two in the Yangtse Valley.

RING-NECKED PHEASANT.

PHASIANUS TORQUATUS GM.

(*P. holdereri* kiangsuensis Buturlin.)

Description.—Length 25 inches. Tail 20 inches in the male. Bill ivory white, shaded darker in the female. Iris yellow. Legs light bluish slate color.

Male.—Head and upper neck iridescent, dark, purplish green, except the crown and nape which are light bronze green in the center with a white line on either side, and the space around the eye which is covered with very short red, hairlike feathers dotted with black ones. There is a pure white collar more or less complete around the neck.

The lower neck and upper back are richly marked with black, white, and yellow; the scapulars with rufous, white, and black; and the general

color of the lower back, rump, and upper tail coverts is irridescent bluish slate color with a rusty red patch on each side. The flanks are orange-color, spotted black. Breast rich irridescent chestnut, each feather very narrowly margined purple. The wings are a mixture of gray and dull white with some rufous on the coverts.

The tail feathers are a buffy-gray, barred black at the center and rufous toward the edge. The two ~~outer~~ *central* quills are the longest.

The white collar on a very dark purplish green neck is the distinguishing feature.

Female lacks the brilliant color of the male.

The same short red feathers occur around the eye, but the dots are grey.

The whole plumage is mottled black, chestnut, and ochraceous grey with a greyer cast to the lower parts and frequently more or less rufous washing on the upper parts.

The tail is also much shorter.

Distribution.—Siberia, Korea, and China and resident throughout its range. It has been introduced into both Europe and America.

Nest and Eggs.—The nest is placed in tall grass or weeds and these usually arch over it so as to hide it. The lining is a very simple mass or pad of grass or similar material.

The eggs are yellowish olive and vary from 7 or 8 to 12 in a clutch.

Notes.—This bird is unfortunately decreasing every year in numbers. The inroads made upon them, by the gunners who shoot for the sake of shooting only and kill their bags of scores before they are satisfied, are

reducing them too rapidly for them to be common much longer. Then too, the killing of them for the purpose of shipping to foreign countries is making an unreasonable demand upon them. In addition to these there is the Chinese sportsman, rather professional hunter, who shoots right through the year, and the countrymen who take the eggs to eat or sell. Some adequate protection is needed and must soon be forthcoming or our most prized game bird will soon be a thing of the past.

DARWIN'S PHEASANT.

PUCRASIA DARWINI SWINHÖE.

Description.—Length 23 inches. Bill dusky black. Feet plumbeous blue. Iris brown.

Male.—Head and throat black with greenish metallic reflections. Occipital crest of short brown feathers in front, with longer black ones behind. There is a white spot on each side of the upper neck.

Back and rump streaked ashy grey and brownish black. Lower parts ochraceous brown streaked black except the abdomen, which is rufous, and a dark rufous band running from the base of the throat down the center of the breast and belly to the abdomen.

The tail is of medium length, graduated and streaked longitudinally gray, black, and rufous. Under tail-coverts mixed white, black, and rufous.

Female is similar to the male, except that it has a smaller crest and lacks the pectoral rufous band.

Distribution.—South China, resident throughout its range. Common to the mountainous regions of Fokien and Chekiang Provinces. It is frequently taken on Mohkanshan.

Phasianus reevesii Gray, Reeves' Pheasant has also been taken in the Yangtse Valley and *Pucrasia joretiana* Courtois has been taken in Anhwei Province.

ORDER, GRUIFORMES, CRANE-LIKE BIRDS.

The characteristics of this order are: toes four; middle toe without a comb and generally not webbed; hind toe generally small and higher than the front ones, or, if on the same level, as in the Gallinules, the bill is then comparatively short stout, and the forehead has a bare frontal shield; lores feathered, or in the Cranes with hair-like bristles.

Family, Rallidae, Rails, Coots, Gallinules.

This family is composed of medium sized wading or swimming birds distinguished by extreme narrowness, or compression of the body. They have long necks, small heads, short bills, and short rounded concave wings. The legs are long in proportion to the size of the bird, and, like the feet, quite strong.

Rails and Gallinules are not strictly gregarious, but are usually associated through a community of interest, while Coots are as a rule found in flocks. Rails inhabit grassy marshes, in which they seek safety by running or hiding, taking to wing only as a last resort. Their flight is then short and labored, and with dangling legs they soon

drop into cover. Nevertheless they perform extended migrations, travelling hundreds of miles without resting. Gallinules live near the marshy borders of bodies of water, while the more aquatic Coots resemble Ducks in their habits.

This family has about 180 species, of which China possesses 11, all of which occur in the Yangtse Valley.

INDIAN WATER RAIL.

RALLUS INDICUS, BLYTH.

Description.—Length about 13 inches. Bill red and longer than the head. Legs and feet light brownish. Iris red.

Plumage above olive-brown marked with black; black more conspicuous on head, and brown on the rump. Throat whitish. Breast blue-grey washed with brown. Abdomen reddish brown, flanks bordered with white. Lower tail coverts are black and have white edges. The wing has a white edge.

Distribution.—Siberia, China, and Japan to India. It is a summer visitant in the Yangtse Valley.

Nest and Eggs.—A nest of the European bird is thus described by Sharpe:—"It was about a foot from the ground, but had a solid foundation under it, formed by the roots of the clump of bushes, in the midst of which it was built. It was carefully made of flat sedge and the flat leaves of the reed, lined with dry broken pieces of round slender reeds.'

"The eggs were five to seven in number, but sometimes as many as eleven. Ground color creamy or

pinkish-stone, with a few spots of rufous distributed over the egg, or clustering towards the larger end. The egg is double spotted, the underlying spots being lilac-grey, nearly as distinct as the overlying ones. As a rule, the rufous spots are small, but occasionally they are large and form blotches towards the big end of the egg."

Notes.—This bird is much like the European bird *R. aquaticus*, differing, however, in that "the adult male of *R. indicus* is darker and more ochraceous brown and distinguished by its whitish eyelid. There is also a distinct streak of ochraceous brown spotted with black running through the eye and extending along the ear coverts which is lacking in the European bird."

MOORHEN.

GALLINULA CHLOROPUS (L.)

Description.—Length 14 inches. Frontal plate and basal half of bill red, the other part greenish yellow. Iris red. Legs greenish-yellow, reddish orange above the tarsal joint, toes very long.

Upper parts dark olive-brown. Head, neck, and under parts slate, grey, with some white streaks on the flanks. Under tail-coverts white at the sides and black in the center. *Young birds* have head and upper parts olive brown; throat, front neck, and a spot under the eyes whitish; below pale-grey.

Distribution.—The greater part of Africa, Europe, India, Japan, Siberia and throughout China generally. It is a Summer visitant in the Yangtse Valley.

Nest and Eggs.—The nest of this bird in India is “a bulky platform of straw, flags, or rushes, in the water or close to it, sometimes in a bush. The eggs, 5 to 9 in number, are pale stone-color, spotted and speckled with red, reddish brown, and purple.”

Notes.—The moorhen swims and dives with ease, and feeds a good deal in the water, usually keeping near a convenient cover in which it takes refuge on the slightest alarm. When hunted, it dives and is able to remain submerged for an indefinite time by grasping the weeds at the bottom with its claws and keeping its nostrils above the surface. It feeds on worms, slugs, all kinds of insects and also on vegetable food.

WHITE-BREASTED WATER HEN.

AMAUORNIS PHOENICURUS (PENN.)

[*Gallinula phoenicura* (Penn)].

Description.—Length 13 inches. Bill green shading to red on front part. Legs and feet green with yellowish tinge. Iris reddish brown.

Plumage of upper parts greyish black with metallic reflections. Lower belly and under tail-coverts chestnut red. Forehead, sides of head, and under parts white. “Outer margin of first primary and edge of wing white. In *young birds* the forehead, crown, and upper parts generally are olive-brown, and the white of the face and under parts obscured by the dusky tips to the feathers.”

Distribution.—India, Philippines, South and Central China. It is a summer visitant in the Yangtse Valley, common in the paddy fields.

Nest and Eggs.—The nest is sometimes placed on the ground, but more often in the tangle of vegetation which covers so much of the surface of our shallow ponds or lakes. It consists of a pad of grass, leaves and other similar materials often placed upon a foundation of small twigs.

The eggs, from four to eight in number, are a deep cream-color, or even pinkish at times, spotted, streaked, and blotched with brownish red and violet.

Notes.—This bird is rather common throughout the summer in the fields planted with the rice or other thick growths that form so much of the Chinese food crops and occasionally they perch in low trees and utter their call. They begin their calls early in the morning and they are taken up again late in the afternoon. They are easy to hear, but difficult to see, for they hide away in the deep growth and are so shy that they rarely come out. Our usual view of this bird alive has been the hurried glimpse as it ran across the little ridges that divide one field from another. When one approaches, the call ceases and it is hard even to flush the bird from its hiding place.

But twice we have had it sit in plain view on the water near the edge of the reeds bordering a small pond allowing itself to be watched for some minutes. In both cases it showed considerable curiosity as to our movements and evinced very little fear.

WATER COCK.

GALLICREX CINEREA (GM.)

Description.—Length 17 inches.
 " In males the bill and shield are red,

anterior portion of the bill duller. Iris red, eyelids plumbeous. Legs and toes red. In *females* the bill is yellowish horny. Iris yellowish brown. Legs and feet dusky green." The forehead is covered with a red frontal plate or shield. Plumage black mixed with brown above. The female has upper parts brown mixed with yellow. The throat is whitish. Under parts light yellow barred with brown. The under tail coverts are white in the male and buff in the female barred in both sexes with dark brown.

Young birds like females except as to bars on lower plumage, which are either lacking or indistinct.

Distribution.—India, Philippines, South and Central China. Summer visitant in the Yangtse Valley.

Nest and Eggs.—The nest is a shallow pad of dry vegetation, the outside layer being twisted about the stalks of herbage which support it. It is usually about two feet above the ground.

The eggs are either a glossy greenish cream color, or sometimes a dull creamy buff washed reddish, and all over more or less spotted and blotched with pale red, with underlying spots of pale purple. The number and size of the spots varies quite considerably.

Notes.—The water cock is a shy, secretive bird living for the most part concealed in the thick growths along the banks of streams or in the swamps. It is best seen about dusk in the marshes, when it will frequently come out on the hummocks or ridges in plain view. We once came upon one in a small piece of marshy ground as it was giving its call. The bird, a male, was so much interested in its own

performances that it did not notice our approach. Dropping its head near the ground, with extended neck, it gave a low rumbling sound for a few seconds, suddenly broken by a loud oft repeated call resembling "Keh toong" or "Keh toonk". Each repetition of the call accompanied by violent contortions as though the bird were suffering from fearful nausea.

COOT.

FULICA ATRA L.

Description.—Length 16 inches. Bill and frontal plate white. Legs green, toes half webbed. Iris red.

The plumage is entirely black or greyish black.

The black under tail-coverts readily distinguish the Coots from the Water-hens.

In *young birds* the upper plumage is brown and the lower plumage partly white.

Distribution.—Almost cosmopolitan. It is a resident in the Yangtse Valley.

Nests and Eggs.—The nest and eggs of the Indian bird are thus described. "The nest is a huge mass of green rushes and weeds, sometimes in shallow water, sometimes floating amongst reeds. The eggs 7 to 10, or even 12 in number, are grey or pale brown, minutely speckled with black with a few larger purplish-black spots."

These other members of this family also occur as summer visitants in the Yangtse Valley, but are less likely to be seen than those already described:—

Hypotaenidia jouvi (Stej.), Blue-breasted Banded Rail,

Limnobaenus fuscus (L.), Red-throated Rail.

Limnobaenus paykulli (Ljungh).

Coturnicops exquisita (Swin.), Exquisite Crake.

Porzana pusilla auricularis (Reich), Baillon Crake.

Amaurornis coccineipes (Slater), Crimson-legged Water Hen.

Family, Gruidae, The Cranes.

The bill and tarsi of the Cranes are both long, and the lores are covered with bristles. Externally they resemble the Herons and Storks. Their wings are long and they fly with their necks straight out, as do the Storks, but their toes are short and not on the same level, the hind one being especially small and much raised. They lack both the powder-down patches and the comb-like nail of the Herons. Their nostrils are long slits. Cranes frequent plains and marshes and feed on all kinds of small animal and vegetable food.

The family is cosmopolitan in its range, and contains about 19 species, of which China has 6, and the Yangtse Valley 5.

They are all winter visitants and are as follows :—

Grus lilfordi Sharpe, Gray Crane.

Grus japonensis (Muller), Green-billed Crane.

Grus monachus Temm., White-headed Crane.

Pseudogeranus leucauchen (Temm.), Manchurian Crane.

Sarcogeranus leucogeranus (Pall), White Siberian Crane.

Family, Otidae, Bustards.

Bustards are large bulky birds, with rather long neck and lank, naked legs. They have only three toes, all of which are directed forward. Their strong legs and feet well adapt them to running, though they readily take to wing when pressed. They possess ample wings, but are largely terrestrial in their habits, frequenting dry open plains.

The only species found in China winters in the Yangtse Valley.

EASTERN BUSTARD.**OTIS DYBOWSKII TACZ.**

Description.—Bill grey. Legs grey. Iris brown.

The general color above is "sandy rufous broadly banded across with black, lower parts below the breast white." Head and neck behind and on the sides clean ashy grey, a few rufous feathers barred with black at the side of the neck.

The distinguishing mark of the species is that the greater wing coverts are like the back, the middle row being light grey or white like the lesser coverts. The tail feathers are brown and white tipped with black.

See page 97
for correct

Distribution.—This Bustard extends across Siberia to China and Japan. It breeds in the north and is a winter visitant in the Yangtse Valley.

Notes.—Mr. Sowerby says that in the north "the Chinese hunt the Bustard by digging pits in the ground, and setting out decoys. They will sit patiently in these pits, day after day, and feel repaid for their labor if they secure two or three birds a week. The decoys are made from the skins of the

Bustards, which are stuffed with straw and stuck upon sticks."

This Bustard is the so-called "wild-turkey" of the Shanghai markets.

ORDER.—CHARADRIIFORMES, PLOVER-LIKE BIRDS.

This order is comprised of the typical Plover-like birds, the Gulls and and Terns and their allies, and the Pigeons, which are terrestrial in their habits. The reasons for connecting groups of such different appearance and habits are almost entirely anatomical.

Distinctive characteristics can best be given under each family.

Family, Charadriidae, Plovers, Snipe, etc.

This family is composed of wading birds frequenting the marshes or shores of bodies of water. They have mostly rather long necks, slender legs, long slender bills, short wings and tails and a dull colored or streaked plumage.

GREY LAPWING.

MICROSARCOPS CINEREUS (BLYTH)

(*Chettusia cinerea* Blyth)

(*Lobivanellus cinereus* Blyth).

Description.—Length $15\frac{1}{2}$ inches. Bill lemon yellow, tipped black. Legs deep orange yellow. Iris red. Eyelids bare, yellow. There is a line of bare yellow skin from the eye to the gape and a yellow, leaf-shaped plate of skin on either side at the base of the bill.

The whole head above and below is greyish slate color. The neck, back, rump, and inner tertials are a light

fuscous ; the breast, scapulars, lesser wing coverts and outer ends of primaries deeper fuscous. The rest of the plumage is white except a black band at the tip of the tail.

No other mottled Lapwing has both white secondaries and a hind toe.

Distribution.—India, Eastern Asia and China generally. It is a summer visitant in the Yangtse Valley, and is much more plentiful during migration.

Nets and Eggs.—These Plovers nest in the wheat and paddy fields from April to June. The nest is generally placed on the grassy ridges between the cultivated fields. There are usually three eggs to the clutch. They are yellowish-olive in color more or less heavily spotted and blotched with dark brown and dull purplish grey.

Notes.—During the nesting season the male bird guards the nest and the sitting female, boldly driving away any other bird which may happen to come near. Even the large Black-eared Kites (*Milvus melanotis*) are unhesitatingly attacked and put to rout. The call is a loud, harsh scream which is uttered both when on the wing and from the ground.

LAPWING.

VANELLUS VANELLUS (L).

(*Vanellus cristatus* W. and M.)

Description.—Length 13 inches. Bill black. Legs and toes dull orange: claws black. Iris dark brown.

Forehead, crown, and back of head black with green reflections and ending with a crest from one to three inches long. Back olive green with purple and bronze reflections. Throat and

breast black. Neck white on the sides. Upper and under tail coverts chestnut buff.

Distribution.—Europe, North Africa and all Asia. A very common winter visitant in the Yangtse Valley. They breed in Mongolia.

Notes.—The Lapwing has a peculiar call, "pee-weet," from which the bird is sometimes known as the Peewit. It is constantly met with in large numbers in the paddy fields and marshes where it feeds upon the animal life so common in such places. It runs swiftly on the ground, stopping abruptly to pick up its food. When danger approaches, it is an adept at "freezing," or standing motionless, its mottled coloring often rendering it invisible, although in plain view, until the whole flock suddenly rises with a call similar to the "mew" of a cat.

GREEN SANDPIPER, (SNIPPET).

HELODROMUS OCHROPUS (L).

[Totanus ochropus (L)].

Description.—Length $9\frac{1}{2}$ inches. Bill straight and grey, green at the base. Legs brownish green. Iris brown.

Upper parts greenish brown, streaked and speckled with white. Upper tail coverts and tail white, the latter having four black bars. Upper breast speckled and streaked with brown. Rest of lower parts white. Axillaries brown barred white.

Distribution. Europe, Africa, Northern parts of America, and Asia. It occurs in China generally. It is a winter visitant in the Yangtse Valley, nesting in Siberia and the far North.

Notes.—This bird never associates in large flocks, rarely more than four or five, and is usually solitary or in pairs. It is quite common along the edges of streams or in marshy spots where it seeks its food of worms, larvae and insects.

The call note is a shrill whistle something like "cheet." This bird has the peculiar habit of using the deserted nests of other birds, such as Thrushes and Blackbirds, often at a considerable height from the ground, though usually not far from some water.

COMMON SANDPIPER.

ACTITIS HYPOLEUCOS. (L.)

(Totanus hypoleucos L.)

[*Tringoides hypoleucos* (Swinhoe).]

Description.—Length $7\frac{1}{2}$ inches. Bill greyish brown, darker at the tip, tinged green at the base. Legs and toes green. Iris dusky brown. Plumage above is greenish brown, barred and striated with black and grey, each feather having the shaft black. Tail barred with black. Under parts, including axillaries, are white and there are large patches of white on the primaries and secondaries but none on the rump or upper tail coverts.

Distribution.—Europe, Africa, Australia, India, East Indies, Japan, and China. It is a resident in the Yangtse Valley, breeding in China, Siberia, and Japan.

Nest and Eggs.—The nest is usually a very slight affair made of moss, leaves, or grass and placed near the banks of a body of water. It may be placed in a hollow, in a bunch of

grass or even on the bare ground. The eggs, four in number, are buff spotted and speckled with light and dark brown.

Notes.—This bird is rather common and is frequently seen along the edges of canals, around ponds, and along the smaller streams.

WOODCOCK.

SCOLOPAX RUSTICOLA L.

Description. — Length fourteen inches.

"Bill pale reddish-brown, grey at the base, dark brown towards the tip, the tip itself dusky; it is about three inches long. Iris dark brown, large, prominent, and placed high up and far back on the head." Legs short and dark grey.

Top of the head flat, greyish brown in color. Neck and back a mixture of several shades of brown, or yellowish with zigzag bars and black streaks. The wings are reddish brown, variously ringed or spotted with darker. Throat and breast yellowish brown barred with darker.

Distribution.—Europe, Asia, and North Africa. Common winter visitant in the Yangtse Valley.

Notes.—This bird is more common through the winter in South and Central China than in the north. It feeds on worms, insect larvae, and insects, boring for them with its long bill.

The colors of the Woodcock which comprise brown, yellow, rufous, black, white and grey, harmonize well with the cover under which the bird lies. When flushed, it makes a most erratic flight, often returning to a spot

near the place from which it was started.

FAN-TAIL SNIPE.

GALLINAGO GALLINAGO (L.)
(*Gallinago coelestis* Frenz.)

Description. — Length about 11 inches.

Bill brown, paler at base. Iris brown. Legs yellowish green.

Upper parts a mixture of black, grey, and reddish with rufous spots. Throat, breast, and under tail coverts grey spotted with brown. Abdomen white barred with black on the flanks.

This bird is similar in a general way to the other snipes, but there are four buff stripes extending down the back (pale in winter) being the outside margins of the scapulars, which are brown in the center. These points together with the 14 tail feathers, all approximately of the same width, serve to identify the bird.

Distribution.—Europe, Asia, and Africa. This snipe is a winter visitant in the Yangtse Valley, being more or less common from September to May. It breeds in the North.

Notes.—"Late in March or early in April the snipes pair, and it is then that the males begin to practice their curious aerial exercises, familiar to any one who observes wild bird life, and about which so much had been said by ornithologists. The performance takes place at all hours of the day, but chiefly towards evening, the bird rising to an immense height in the air, and precipitating himself downwards with astonishing violence, producing in his descent the peculiar sound variously

described as drumming, bleating, scythe-whetting, and neighing. As to how the sound is produced opinions differ still, although the question has been discussed for more than a century.

Probably it is part vocal and partly produced by the wing feathers."

SWINHOE'S SNIPE (GREATER SPRING SNIPE).

GALLINAGO MEGALA SWINHOE.

Description.—Length $11\frac{1}{2}$ inches. Upper parts are a mixture of black, grey and reddish, with rufous spots. Rump uniform brown. Throat, breast and under tail coverts grey, spotted with brown. Abdomen white barred with black on flanks.

There are twenty rectrices in the tail, the first three external pairs are acumined, the next three pairs narrow, while the central four pairs are moderately broad.

Distribution.—From the Philippines to Eastern Siberia, Passes the Yangtse Valley—on migration.

Notes.—This bird is quite common in Shantung—rarer in the Yangtse Valley—in both the spring and the autumn migrations. It frequents the rice fields, water courses, the swamps, and may be found in any place where there is enough moisture to make its food abundant.

PIN-TAIL SNIPE, (LESSER SPRING SNIPE.)

GALLINAGO STENURA BP.

Description.—Length 11 inches. Plumage is very similar to Gallinago megal, but perhaps a little more

rufous on the upper parts, while the bill and legs are also a little shorter.

The tail has twenty six rectrices, the eight lateral pairs being very narrow, while the five central pairs are moderately broad.

Distribution.—India, through China up to Siberia. Passes Yangtse Valley on migration and breeds in Eastern Siberia.

Notes.—The Pintail Snipe are usually more abundant in the Spring when they are often found in large, loose flocks scattered through the young wheat. They have a very peculiar way of alighting, tilting backward until the tail points almost straight downward before reaching the ground.

PAINTED SNIPE.

ROSTRATULA BENGHALENSIS (L.).

[*Rhynchaea capensis* (L).]

Description.—Length ten and one half inches.

Bill greenish at the base, white in the middle, and red at the end. Legs greenish blue. Iris greenish brown.

Crown olive brown with buff median line. White region round the eye is prolonged toward the nape. Back olive, with wavy lines of dark brown, and mixed with grey, green and yellow. Upper tail coverts grey, yellow, and rufous mixed, with fine transverse lines. Rectrices, from 14 to 16 in number, have round, rufous spots on the external shafts. Sides of neck and throat olive brown, spotted with white and black. Abdomen white.

The *Female* is even more richly colored and has in addition on the upper breast a band of black.

Distribution.—Warm regions of Asia, Africa, Australia, East Indies, and Japan.

This bird is a resident in the Yangtse Valley though not common. It breeds throughout its range.

Nest and Eggs.—The nest is placed on the grassy ridges between the paddy fields, or in marshes, or similar locations. It is usually a small hollow lined with a pad of grass or rushes. There are usually four eggs in a clutch. The ground color of the eggs is usually a light yellow and they are spotted and streaked with brown of two shades with a few greyish spots.

Notes.—This snipe is more common in Spring, but is rarely found in large numbers, the rule being in singles or small groups.

The following additional representatives of this family also occur in the Yangtse Valley, but are so rare that they are not often met with:—

Recurvirostra avosetta L., Avocet.

Himantopus himantopus (L), Black-winged Stilt.

Gallinago solitaria Hodg., Solitary Snipe.

Tringa canutus L., Knot.

Tringa crassirostris T. and S., Big-billed Knot.

Erolia ferruginea (Brunn), Curlew Stint.

Pelidna alpina (L), Dunlin.

Pisobia damacensis (Hors.), Long-toed Stint.

Pisobia platyrhyncha (Temm), Broad-billed Stint.

Pisobia acuminata (Horsf.), Sharp-tailed Stint.

Pisobia temminckii (Leisler), Temminck's Stint.

Pisobia ruficollis (Pall), Red-necked Stint.

Calidris leucophaea (Pall), Sanderling.

Eurynorhynchus pygmaeus (L), Spoon-bill Sandpiper.

Rhyacophilus glarcola (L), Wood Sandpiper.

Totanus totanus (L), Red-shank.

Totanus erythropus (Pall), Spotted Red-shank.

Glottis nebularius (Gunn.), Green-shank.

Heteractitis brevipes (Vieil), Eastern Wandering Tattler.

Terekia cinerea (Gued), Terek Sandpiper.

Limosa lapponica baueri (Naum.), Pacific Godwit.

Limosa limosa (L), Black-tailed Godwit.

Limnodromus taczanowski (Ver.)

Numenius phaeopus variegatus (Scop.), Eastern Whimbrel.

Numenius arquatus lineatus Cuv., Eastern Curlew.

Mesoscolopax minutus (Gould), Little Curlew.

Ægialitis alexandrina (L), Kentish Plover.

Ægialitis placida (Grey), Hodgson's Ringed Plover.

Ægialitis dubia (Scopoli), Little Ringed Plover.

Ochthodromus mongolus (Pall), Mongolian Sand Plover.

Ochthodromus veredus (Gould), Eastern Dotterel.

Ochthodromus geoffroyi (Wag.), Geoffroy's Sand Plover.

Squatarola squatarola (L), Grey or Black-bellied Plover.

Charadrius fulvus Gm., Eastern Golden Plover.

Arenaria interpres (L), Turnstone.
Haematopus osculans. Swin., Oyster
Catcher.

Family, Glareolidae, the Pratincoles.

Pratincoles are small shore birds with very long pointed wings and long, deeply forked tails. They have four toes, the outer and the middle ones being united by a short web, while the middle toe has a distinct comb-like claw. Their deeply forked tails and rapid flight suggests the Swallows, and like them they often take their food on the wing.

There are about 20 species in the family of which China has only one.

It is *Glareola maldivarum* Fors., Eastern Pratincole. This bird is a rare winter visitant in the Yangtse Valley.

Family, Jacanidae, the Jacanas or Water Pheasants.

The Jacanas are a small, well marked group of marsh frequenting birds. The name Jacana (pronounced "Hasana") is of Brazilian origin. In spite of their Rail-like appearance and habits they are now conceded to be most closely related to the Plovers.

The most marked characteristic is their enormously long toes and claws which enable them to walk with ease over the water lillies and other aquatic plants of the ponds and marshes.

They have a rather short neck, small head and moderately long bill.

The point of the wing is armed with an unusually long spur.

Jacanas are widely distributed, ranging through the whole tropical and sub-tropical region. Their habits are everywhere very similar. They frequent

slow streams and marshes, feeding on seeds and tender bits of vegetation, as well as crustaceans and insects.

The family is made up of about a dozen species, of which only one is found in China,

PHEASANT-TAILED JACANA.

HYDROPHASIANUS CHIRURGUS
(SCOP).

Description.—Length of male 24 inches; female 18 inches. In summer, the bill is bluish. Legs and feet lead-gray. Iris brown.

In summer plumage, the head and throat are white. Neck yellow. Wings white, washed with yellow. The remainder of body chocolate brown, dull below, bright above, with metallic reflections. In flight, the wings appear white with black tips. The tail which is black, is ten inches long and graduated. There is a spur at the bend of the wing.

In autumn it is much modified, the sharp contrasts being lessened and a more sober light brown taking their places. The long tail feathers are also dropped. Both sexes are alike.

Distribution.—Malaysia, Philippines, South and Central China.

It is a summer visitant in the Yangtse Valley.

Nest and Eggs.—The nest is a large, roughly constructed mass of rushes, weeds, or stems of aquatic plants. Sometimes it is built to float freely upon the surface of the water or at other times placed among the thickly growing reeds. The eggs, four in a clutch, are flat-ended, peg-topped in shape and range in color from yellowish olive to greenish bronze. When fresh

the eggs are smooth and glossy, but the gloss seems to wear off as incubation proceeds.'

Notes.—This species frequents more or less open waters and does not seem to be especially careful about concealing itself. It may be seen in the larger lakes and marshes, running about over the lily pads or swimming back and forth. Its food consists largely of shell fish. Its cry is said to resemble that of a kitten.

Family, Laridae, the Gulls and Terns.

This family contains about 100 species, divided nearly equally between the two sub-families. About one fourth of the known species occur in China.

Sub-Family, Larinae, the Gulls.

The upper mandible of the Gulls is curved, but not swollen at the end. The tail is generally white, sometimes tipped with black; the tail feathers of about equal length.

Gulls are chiefly maritime and pelagic. In flight the bill points forward in the plane of the body. They procure their food largely by picking it from the surface of the land or water with their strongly hooked bills, and not by plunging or darting. The food consists of fish and other aquatic life, and also very largely of refuse of all sorts which accumulates on the surface of harbors and bays. Inland they sometimes feed on insects, such as grasshoppers, etc.

Gulls pass much time resting on the water. They nest in colonies usually on the ground. The seasonal change in their plumage is not great, and affects chiefly the color of the head.

The heads of species black-headed in summer turn white in winter, while the white-headed Gulls of the summer usually have dark streaked heads during the winter.

Five species of Gulls are commonly found along the China coast, at or near the mouth of the Yangtse River.

YELLOW-LEGGED HERRING GULL.

LARUS CACHINNANS (PALL).

Description.—Length 23 inches. Bill yellow with a red spot on the lower mandible. Feet and legs yellow. Skin around the eye vermillion.

Head white in summer, streaked with brown in winter. Neck and under parts white. Mantle light blue grey. The light pattern on the inner webs of the primaries is very distinct and wedge-shaped. Tail white. Wing primaries black.

Young birds are mottled grey and brown. The bill is horn color and the legs dark. The tail has a dark sub-terminal band. Full adult plumage is not assumed until the third year.

This Gull resembles very closely the European Herring Gull, (*Larus argentatus*), differing only in the color of the bill and feet, and that its mantle is slightly darker.

Distribution.—Eastern Siberia and the coasts of China and Japan, westward across Asia and down to the Mediterranean Sea. In China, it is occasionally found at some distance from the sea.

It winters in the Yangtse Valley and nests in the North.

COMMON GULL.

 LARUS CANUS (L).

Description.—Length 17 inches. Bill yellow toward the tip and gray green at the base. Legs green with a reddish tinge.

Mantle pale blue-grey. Rest of plumage white with the exception of the primaries which are black with patches of white on both webs and the third to the sixth quill have white tips.

In winter, the head and neck are streaked with brown.

Adult birds are distinguished by the entirely white tail.

Young birds have the bill black near the tip and reddish brown at the base. The head is streaked with brown in the first year, but in the summer of second year both the head and neck become white. In the first year, the breast is mottled with brownish and the back is brownish grey, each feather bordered with grey. For the first two years, the tail has a dark brown terminal band for about one third of its length.

Distribution.—Europe, Asia, and Africa.

Common along the coast during the winter, but it nests further north.

 BLACK-TAILED GULL.

 LARUS CRASSIROSTRIS (VIEILL.)

[*Larus melanurus* (T. & S.)]

Description.—Length 17 inches. This Gull closely resembles the Common Gull (*L. canus*), but is distinguished by

the zones of the black and red on its bill and by the subterminal black band on the tail at all seasons in both adults and young.

Immature birds have three fourths of the tail nearly black while the immature of the Common Gull (*L. canus*) have only one third dark brown.

Distribution.—This is the common Gull of China and Japan. It winters in the Yangtse Valley and goes North to breed in North China, Eastern Siberia, and Japan.

It is found in large numbers on the China coast and sometimes on large bodies of water far in the interior.

LAUGHING GULL.

LARUS RIDIBUNDUS (L.).

Description.—Length 16 inches. Bill and legs red. Iris brown, eyelids red.

In winter plumage, the head and under parts are white and the mantle bluish grey. The tail is white. The primaries are black with grey outer webs.

In summer, the head of the adult bird is dark brown.

Young birds are mottled with brown and do not have the dark head in summer. The characteristic mark of this bird is the red bill which is much smaller and less swollen at the tip than the larger Gulls.

Distribution.—Europe and Asia. It is a winter visitant in the Yangtse Valley and breeds further north.

SAUNDER'S GULL.

LARUS SAUNDERSI (SWINHÖE.)

[*L. vegae* (Stej.)]

Description.—This small gull closely resembles the Laughing Gull (*Larus ridibundus*), but differs from it in three particulars.

1.—The bill is short, strong, and black in color at all seasons.

2.—The eyes are black.

3.—The head in summer in bronze black instead of dark brown.

Distribution.—China, nesting north to Mongolia and wintering in the Yangtse Valley and to the south.

This is the Gull most frequently seen on the fresh water of the interior.

Sub-Family, Sterninae the Terns.

Bill straight and sharply pointed—not hooked; outer tail feathers generally longer than the middle ones. Terns are littoral, never pelagic. They inhabit the shores of bodies of both fresh and salt water, but are more abundant on the sea coast. They capture their prey of small fish by plunging into the water, frequently disappearing and swimming a few feet beneath the surface.

In flight the bill points downward. On the wing Terns are strong, rapid and graceful. The flight is unlike that of any other bird. Buoyant and slightly wavering, it reminds one of the high, apparently uncertain flight of some large-winged butterflies. On account of their unusual powers of flight they have been called Sea-swallows.

Terns nest in colonies, usually on the ground.

Six species of Terns frequent the Yangtse Valley and coast region.

CASPIAN TERN.

^R
HYDROPOGNE CASPIA (PALLAS).

Description.—Length 22 inches. "Bill coral red in summer, dull in winter, with the terminal portion dusky. Iris dark brown. Legs and feet black."

This is the largest of the Terns and one of the handsomest.

It is readily recognized by the strong, sharp, red bill, black legs, and black occipital crest.

The general color of the upper plumage is pearl grey and the under parts white.

Distribution.—It is practically world-wide in its distribution. It passes the Yangtse Valley on migration and is most commonly seen along the coast, though it is occasionally found on the lakes and marshes of the interior.

David remarks that he only met with this Tern in couples, but small flocks were repeatedly seen by Dr. Bergen in Chefoo harbor.

 THE WHITE-WINGED BLACK TERN.

HYDROCHELIDON LEUCOPTERA
(TEMM.)

Description.—Length 10 inches. Bill and legs red. Iris dark brown. Abdomen, under tail coverts, and tail are white. The wing quills are grey. The rest of the plumage is a deep black.

Distribution.—Europe, North Africa and Asia. It passes the Yangtse Valley on migration. This Tern is found along the China coasts and also frequently on the inland waters.

CHINESE LITTLE TERN.
(WHITE-SHAFTED TERNLET.)

STERNA SINENSIS (GM.).

Description.—Length $9\frac{1}{2}$ inches. "Bill in summer yellow, broadly tipped with black; in winter, dark brown." Iris brown. Legs orange red.

Crown black spotted white in winter, with a white forehead and a black nape. Upper parts are blue-grey and the under parts are white washed grey. The shafts of the three outer primaries are white. The tail is white. This bird closely resembles the European Little Tern (*Sterna minuta*), but it is a little larger.

Distribution.—The East Indies, Australia and Eastern Asia. It passes the Yangtse Valley on migration.

FORKED TAIL TERN.

STERNA HIRUNDO (L).

[*Sterna fluviatilis* (Neum)]

Description.—Length 16 inches. Bill, legs, and feet red; the bill shades to black at the tip.

Crown black, forehead white, and the nape mottled in winter. The rest of the upper parts are pearly-grey or greyish blue. The under parts are white.

In summer, the breast is washed with grey and the forehead and nape are black.

Distribution.—Almost cosmopolitan. This bird occurs in China both along the coast and on inland waters. It passes the Yangtse Valley on migration.

The following member of this group has also been taken in the Yangtse Valley :—

Hydrochelidon hybrida (Pall),
Whiskered Tern.

Family, Columbidae, Pigeons and Doves.

The 300 known species of this family differ widely in their habits and haunts. When drinking they do not raise their heads as do other birds to swallow, but keep the bill immersed until the draught is finished. The young are hatched naked and are fed by regurgitation.

China has 15 species of this family, of which 3 frequent the Yangtse Valley.

SPOTTED-NECKED DOVE.

SPILOPELIA CHINENSIS SCOP.

[*Turtur chinensis* (Scop)].

Description.—Length $12\frac{1}{2}$ inches. Bill plumbeous. Legs deep pink. Iris orange colored. Upper parts brown, feathers bordered rufous.

Scapulars and wing coverts bordered with bright rufous. Rump silvery blue. Under parts grey washed with rose. Wings and base of tail brown. This bird has a patch of the black feathers at the side of the neck, each marked at the tip with a small white circle having a black center. These patches sometimes meet at the back of the neck forming a demi-collar : this is the distinguishing characteristic of this bird.

Distribution.—All of Asia, China, and Japan. It is occasionally seen in Europe. A very common resident in the Yangtse Valley.

Nest and Eggs.—These birds nest freely around the foreign style houses in this portion of China, using any convenient projection forming a shelf on which a nest may be placed. They seem especially partial to thick vines or shrubbery in close proximity to the house. The clutch consists of two pure white eggs.

Notes.—This is one of the common breeders on the Soochow University Campus. Every spring, two or three pairs of these birds come around to hunt for suitable nesting places and may be frequently seen in pairs on the chimneys or the ridges of the roofs, gently cooing to one another. During the winter months they rarely come about, though they may be found feeding in the fields and thickets around the Chinese houses or grave mounds.

BLUE PIGEON.

TURTUR ORIENTALIS (LATH).

(*Turtur rupicola* Bp.)

Description.—Length about 13 inches. Bill blackish grey. Feet dull purplish lake. Iris orange yellow, eyelids pale blue.

Upper parts olive grey. Crown blue grey. Neck, breast, and abdomen rosy lavender. Nape and sides of neck have a demicollar of black, the feathers tipped with white or rufous. This gives the effect of a mottled patch on the side of the neck which is the easiest mark of identification.

Distribution.—India and China generally. It is a common resident in the Yangtse Valley.

Nest and Eggs.—The nest is a loosely constructed one, though pro-

bably more substantial than that of most of the doves. It is generally in the pines or cedars on the foothills, but it may sometimes come quite close to the settled neighborhoods.

The eggs are white and there are two to the clutch.

Notes.—These birds gather in flocks during the winter and are found chiefly upon the cultivated plains around the foothills.

RED TURTLE DOVE.

STREPTOPELIA HUMILIS (TEMM).

(*Oenopopelia humilis*).

[*Turtur humilis* (Temm.)]

Description.—Length about 9 inches. Bill black. Legs brown, claws black. Iris brown.

“The plumage is vinous red, marked on the head, back, rump, and flanks with grey, paler on the forehead. There is a black collar on the hind neck and the wings and their coverts are blackish. The under tail coverts are white; the outer ends of the tail feathers white to gray on the under side.”

The *female* is pale brown, greyer than the male.

Distribution.—India, Philippines and all China. It is a fairly common resident in the Yangtse Valley.

Nest and Eggs.—These Doves usually build in trees and the nests are very slight affairs, the eggs often being visible through the thin structure. The eggs, two in a clutch, are pale cream color.

Notes.—This is a lovely bird, particularly the male in his best plumage. It is our smallest dove. In its habits, it is a shy bird and is not often seen in the vicinity of houses.

Pere David says that it does not range further north than the Yellow River. Dr. Bergen has taken a number of specimens in Shantung very near the river and it seems likely that it may also cross over and go further north.

ORDER.—CUCULIFORMES, CUCKOO-LIKE BIRDS.

This order possesses the “yoke toed” foot caused by the first and fourth toes being permanently directed backward, similar to the Woodpeckers. Structurally, however, they quite distinct.

Further characteristics of the order are largely anatomical and are not necessary in our present treatment.

Family, Cuculidae, The Cuckoos.

The characteristics of the Cuckoos are: feet small and weak; toes two in front and two behind; bill medium in size and length and slightly curved downward; tail feathers ten in number and soft; contour feathers without an aftershaft.

Cuckoos are as a rule solitary birds inhabiting wooded areas. Their flight is generally weak, and only from tree to tree. They possess strange vocal powers, and their weird calls are frequently the origin of their popular names. Many species are remarkable for the irregularity of their breeding habits, depositing their eggs in the nests of other birds, and leaving the rearing of the young to their foster parents.

The young are hatched naked, and do not pass through a downy stage before acquiring their feathers.

There are about 225 species of Cuckoos distributed over the world.

China has 16 species, none of which are peculiar to the country. Five species frequent the Yangtse Valley.

COMMON CUCKOO.

CUCULUS CANORUS TELEPHONUS
HEINE.

Description.—Length thirteen inches. Bill horn color, yellow at the base and the edges. Legs and toes light yellow. Iris greyish or reddish brown.

Head neck and upper breast ash grey. Back and wings darker. Abdomen white barred with black. Primaries barred on inner webs with white. Tail long, dark, and graduated, sometimes with a gloss of green on its upper surface.

The tints of the *female* incline to brown rather than grey.

The *young* have some of the feathers and the tail tipped with white.

Distribution.—Europe, North Africa, and all Asia. It is a common summer visitant in the Yangtse Valley.

Breeding Habits and Eggs.—This cuckoo, like the others of its kind, does not build a nest or sit upon its eggs except in very rare cases. It lays its egg upon the ground and then takes it in its bill and carries it to the nest of the bird which it has chosen to raise its young: sometimes it may lay the eggs directly into the nest.

The eggs vary greatly in color, but usually have a ground-color of various shades of very light green, spotted and blotched with dark brown and purplish spots. They are usually much larger than the eggs of the birds in whose nests they are deposited.

Notes.—Some one has given this schedule of travel for the cuckoo :—

“In April come he will ;
In May he sings all day ;
In June he changes his tune ;
In July he prepares to fly ;
In August go he must.”

His song consists of two or three notes which may be thus indicated :
“Kook-koo, Kookook-koo.”

INDIAN CUCKOO.

CUCULUS MICROPTERUS, Gould.

Description.—Length 12 inches.

Bill upper mandible and tip of lower black, rest of lower mandible yellow. Feet yellow. Iris brown.

Plumage above fuscous brown, the head being greyish. Neck and breast pale grey. Abdomen white crossed by conspicuous black bands, rather far apart. Tail brown above and crossed with large black band near end; it is irregularly barred and spotted white throughout its length.

To identify this bird, note particularly its large beak, the brown color of the upper surface of its wings and its banded tail.

Distribution.—India, South and Central China. Very abundant summer vistant in the Yangtse Valley. It usually comes early in May and leaves toward the last of July or first of August.

Breeding Habits and Eggs.—This bird, like the common cuckoo, depends upon other birds to raise its young for it after it has laid its eggs in the nest. These birds have come every year for the last few years with a colony of Azure-winged Magpies to a group of trees near the Soochow University

Campus. On account of the location of the magpies' nests we have not been able to examine many of the eggs and have not found the cuckoo's among them, but we believe that they do slip their eggs into their neighbors' nests and that the magpies do raise their young for them. If the habit so often ascribed to the young cuckoos is really true, we have seen many evidences of their pushing the smaller magpies out of the nest. Often they are found on the ground under the nests, and it may be that they have been pushed out by the stronger and more greedy young cuckoo.

The egg of this bird has a ground color of pinkish white, specked and spotted more thickly around the larger end with round, rich-red markings; the smaller end has fewer markings.

Notes.—This bird begins his call in the early morning and keeps it up pretty constantly throughout the day. The call is a whistle of three or four notes which has been thus spelled, "kwi-kwohkwok," or "Kwikwi-kwohkwok." The Chinese interpret this as an exhortation to hurry with their work, "quick, quick, reap wheat," "quick, quick, plant rice," "quick, quick, plant cotton."

The *female* of this bird has a call also much like a shrill, quick laughter, or as if made by quick repetition of the syllable "kuk".

RED-WINGED CRESTED CUCKOO.

CLAMATOR COROMANDUS (L.)

[*Coccytes coromandus* (L).]

Description.—Length fourteen and one half inches.

"Bill black; mouth inside salmon-color. Iris pale reddish brown; eyelids plumbeous. Legs plumbeous, claws horny."

Head crested, plumage not barred. Tail as long as the body. Upper parts dark metallic green, with incomplete white collar on the nape. Throat and breast fawn color. Abdomen light grey. Under tail coverts dark green. Wings rufous.

Young birds have most of the feathers of the upper plumage tipped with pale rufous, especially noticeable on the crown.

Distribution.—India, South and Central China. Summer visitant on the hills in the Yangtse Valley. It is not uncommon on Mokanshan.

Notes.—This bird frequents the hilly areas and rarely comes to even the lower hills that are isolated. It has a loud call that may be heard for quite a distance. "The call is dissyllabic and may be written 'Kuk-kuk'."

These other cuckoos have also been taken in the Yangtse Valley:—

Cuculus optatus (Gould?), Dark or Hill Cuckoo.

Cuculus intermedius Vahl., Small Cuckoo.

Hierococcyx fugax nasicolor (Blyth), Hawk Cuckoo.

ORDER, CORACIIFORMES, ROLLER-LIKE BIRDS.

The birds composing this group are arboreal in their habits and quite cosmopolitan in distribution. In the majority of cases they nest in holes and lay white eggs, and the young are hatched blind and helpless. They

have comparatively short legs and the nostrils are narrow and slit-like.

Family, Coraciidae, The Rollers.

The Rollers are a small family confined to the Old World. Their feet are small and weak, and the toes more or less united. The wings are long and broad and the tarsus relatively short.

They are shy birds, distinctly arboreal in their habits, though strong active fliers. They have a peculiar habit of rolling from side to side in flight, from which they get their common name. Their food consists of insects which are taken largely on the wing.

BROAD BILLED ROLLER.

EURYSTOMUS ORIENTALIS CALONYX
SHARPE.

[*Eurystomus orientalis* (L).]
(*Eurystomus calonyx* Sharpe)

Description.—Length 11 inches.

Bill red, tipped with black. Toes red. Iris dark brown.

Dull green above, bright green below. Throat with a brilliant blue spot. Tail black, washed with blue above. The wing has a large spot of very light blue, plainly visible in flight; outer webs of primaries are deep blue shading to black toward the tip.

Young birds do not have the blue spot on the throat and the plumage of the head and back is more mixed with brown.

Distribution.—This handsome bird is a native of India, but passes the summer in China in considerable numbers. It occurs in the Yangtse Valley on the hills during the summer.

Nest and Eggs.—These birds breed in holes in the larger branches of tall trees. They do not build any nest, but lay their eggs on the bare wood. In some cases they make use of the deserted nests of other birds.

They lay three or four pure white eggs with a faint gloss.

Family, Alcedinidae, The Kingfishers.

The China Kingfishers have small weak legs and feet; the fourth toe is united for more than half its length to the third, and the second and third are united at the base. The bill is the most characteristic feature, it is very large, straight, and pointed. The wings are short and rounded but powerful for their size. The tail is very short.

“Kingfishers are aliko remarkable for their brilliant coloration and for the variety of curious and aberrant forms included among their number”. They are solitary birds of somewhat local habit. Their food is chiefly composed of fish, small crustacea, and similar water forms.

The family is cosmopolitan, having some 180 species, of which the majority are found in the Malay Archipelago. Six species are found in China, of which four reach the Yangtse Valley.

LITTLE BLUE KINGFISHER.

ALCEDO ISPIDA BENGALENSIS GM.

(*Alcedo bengalensis* Gm.)

Description.—Length $6\frac{1}{2}$ inches.

Bill long, sharp, and black in the *male*; the *female* has upper mandible black shading to orange at base, lower

mandible orange. Legs and feet red. Iris reddish hazel.

The throat is white. Breast and abdomen rufous buff. Crown and nape transversely banded dusky black and blue. An irregular stripe of brilliant blue runs down the middle of the back. A buff stripe under the eye, continued by a white one. Scapulars and wing coverts greenish blue, latter tipped with bright blue. Wing quills deep greenish blue on the outer webs, inner ones black. Tail very short, deep blue above, black below.

The *female* is duller in color.

Distribution.—Europe and Asia
This little kingfisher is a very common resident in the Yangtse Valley.

Nest and Eggs.—These little birds build their nest in deep holes in the bank, often taking possession of the burrow of a rat for the purpose. The whole may be two or three feet in depth and the eggs may sometimes be found upon a mass of small fish-bones. These are thought to have accumulated there by having been cast up by the bird rather than having been placed there as nest material.

The eggs, usually 6 or 7 in a clutch, are clear white and round in shape.

Notes.—"In spring, these kingfishers are very noisy and active, chasing each other about at lightning speed even among the houses, or through the trees in the gardens, and uttering a shrill, 'che-et,' 'che-et'."

In the south of China, the beautiful azure feathers of this bird are mounted in various settings, making a most attractive and unique type of jewelry.

BLACK-CAPPED KINGFISHER.

HALCYON PILEATUS (BODD.)

Description.—Length about 12 inches.

Bill and legs red. Iris dark brown ; a few white feathers under the eyes.

The back is brilliant blue. Head and wing coverts black. Wing quills blue at the base, black at the tip ; there is lighter patch on the middle of the primaries (except the first which is wholly black), light blue on the outer webs and white on the inner webs of each feather. A complete collar of nearly white surrounds the neck. The throat is white. Rest of under parts rufous buff.

In *young birds* and *some females* there are black spots on the sides of the breast.

Distribution.—India, Philippines, and the whole of China. It is a summer visitant in the Yangtse Valley.

Nest and Eggs.—This bird nests in holes in the earth and lays nearly spherical white eggs similar to those of the other Kingfishers.

Notes.—This Kingfisher is frequently to be met with in suitable locations, but cannot be called at all common. Its brilliant colors make it a beautiful sight and as it flashes at its prey in the water, it looks like a streak of blue. All of these birds are very patient sitters, but woe betide the fish that happens to come frisking by as they sit waiting for it. Some insist that they never miss one when they make an attempt, but we are inclined to believe that they do sometimes miss.

GREAT SPOTTED KINGFISHER.

CERYLE LUGUBRIS GUTTULATA STEJ.

[Ceryle lugubris (Temm.)]

Description.—Length 16 inches.

Bill black, greenish at the base. Legs and feet olive green. Iris dark brown.

'The head is crested, the crest feathers being black with white spots, and there is a tuft of white feathers in the center of the crown, while the rest of the upper surface is barred with grey and white. Round the hind neck runs a broad white collar. The under surface of the body is white. A long spot on each cheek and a band across the breast are rufous with black spots. The sides of the body are white, barred greyish black. The under wing coverts and axillaries are white.

'The *female* is like the male, but does not have the rufous on the cheeks and breast band. The under wing coverts and axillaries are pale rufous, thus showing the sexual differences which are one of the characteristics of the genus.'

Distribution.—Japan and China. Resident, though not common, in the Yangtse Valley. It is frequently found around the mountain streams and pools.

Nest and Eggs.—Humethus describes a nest of this bird:—"The entrance to the nest was a large hole, fully four inches in diameter, and at the end was a chamber fully ten inches across, in which were four young birds; in the chamber was a quantity of fish bones and some grass. The eggs are usually three or four in number and the birds are in the habit of carrying to their young fishes from six to seven inches in length, and these are always swallowed whole."

Ceryle rudis insignis Hartert, Pied Kingfisher, is a rare summer visitant.

Halcyon coromandus major T. and S., Ruddy Kingfisher passes the Yangtse on migration and

Halcyon smyrnensis fuscus Bodd., White-breasted Kingfisher has been taken as a stray by Styau.

Family, Meropidae, The Bee-Eaters.

The Bee-eaters have small feeble legs and feet like the Kingfishers, but the bill is long and slender and gently curved throughout. They have ten primaries in the wing and twelve tail feathers. The sexes are alike, or nearly so, in plumage.

Over 30 species are known, inhabiting the warmer regions of the Old World. Only two species occur in China, one of which reaches the Yangtse Valley. It is *Merops viridis* Linn, the Bee-eater.

Family, Upupidae, The Hoopoe.

Hoopoes have a long slender bill, curved downward from the base. The tongue is very short. The tarsus is short; the wing is rounded and has ten primaries; the tail moderately long, square, and of ten feathers.

The most marked feature is a splendid erectile crest, of which the hinder feathers are the longer.

The call, which the common name is supposed to represent, is also quite distinctive.

This is a small family containing five or six species, of which two are found in China, and one in the Yangtse Valley.

HOOPOE.

 UPUPA EPOPS LINN.

Description.—Length twelve inches.

“Bill blackish, flesh colored at the base of both mandibles. Feet black. Iris brown.”

“Crest rufous fawn, all the feathers with black tips, and on the longest feathers the rufous passes into pure white before the end is reached; the sides of the head, chin, neck all around, and breast varying from sandy to pale rufous with a vinous tinge; upper back and wings along forearm light brown, then a black band, followed by a buffy white one, crosses the wings and back, with a second black and a second white band on the wings, but the lower back is black or brown; the rump is white; upper tail coverts black, and the tail black with a white bar across it half way down; quills black, the first primary usually with a white spot on the inner web, the other primaries with a white band across them, while the secondaries have white bases and four white bands, and the abdomen is white with dark brown streaks in the front.”

Range.—Europe, Africa, and Asia.

Nest and Eggs.—“Although such beautiful birds, their nesting habits are such as to make them at this time anything but attractive. They select a cavity, preferably a tree, but occasionally in fissures in rocks or the sides of banks or walls, this being rather slightly lined with grass, feathers or hair. In China, they have been known to nest in holes in exposed Chinese coffins, whence they are called coffin-birds. The female sits very close and is fed by the male, and as the droppings are not removed by the old birds the

nest soon becomes very unsanitary and ill-smelling.

"The eggs, from five to seven in number, are at first a pale greenish-blue, but soon becomes stained and discolored to a dirty yellowish color."

Notes.—This bird is rather rare here, but has been seen on the lawns, feeding upon insects on the ground. Once seen, it will not be easily forgotten.

Swinhoe thus describes the note of this bird:—it "is produced by puffing out the sides of the neck, and hammering on the ground at the production of each note, thereby exhausting the air at the end of the series of three notes, which make up its song. Before it repeats the call, it repeats the puffing of the neck with a slight gurgling noise. When it is able to strike its bill, the sound is the correct *hoo-hoo-hoo*, but when perching on a rope, and only jerking out the song with the nods of the head, the notes most resemble the syllables *hoh-hoh-hoh*."

Family, Strigidae, The Owls.

The Owls form a natural and sharply defined group. Without going into the anatomical features which separate them, they are easily recognised by their peculiar face in which the eyes are fixed looking forward, by the disc of feathers which surrounds the face, the soft plumage, and the reversible fourth toe.

Owls are nocturnal, feeding largely on small mammals. Their prey is captured with their talons, and, unless too large, is swallowed whole. The bones and hair are afterward ejected at the mouth in matted pellets. The eggs of Owls are uniformly white and unmarked.

There are but two sub-families, usually recognized among the owls, one of which *Striginae*, is composed of a single genus, *Strix*, the Barn Owls. This family is not represented in the Yangtse Valley.

All remaining Owls are included in a second sub-family.

Sub-Family, Buboninae, The Horned Owls and Their Allies.

In this family of Owls, the inner toe is decidedly shorter than the middle one, the claw of which is without serrations on the inner edge. The first wing quill is shorter than the third, and from one to six quills have their inner web sinuated.

This family is worldwide in its range, and contains about 190 species, of which China has 20, and 10 reach the Yangtse Valley.

GREAT EAGLE OWL.

BUBO BUBO (LINN.)

(*Bubo ignavus* Forster.)

Description.—Length twenty four to twenty six inches. Bill black, legs and toes feathered. Iris golden orange.

Prominent ear tufts. Upperparts of plumage dark brown and yellowish mottled. The under parts light brown, yellowish and grey, each feather separately barred. Throat white.

Distribution.—Europe and Northern Asia, including all China. Resident around the hills in the Yangtse valley.

Nest and Eggs.—"The nest is very large, and is placed on rocks or old ruins, also sometimes on trees, low down in them. It is composed of branches and sticks, and is lined with leaves and straw. Occasionally a

hollow in the bare earth answers the purpose. The same place is frequently resorted to year after year. It is said that a southern aspect is given the preference.

"The eggs are two or three in number, white or bluish white, and like those of all the owls, only slightly oval and of rough chalky appearance."

Notes.—This is the largest of the nocturnal birds of prey.

LONG-EARED OWL.

ASIO OTUS (L.)

[*Asio vulgaris* (Flem.)]

Description.—Length 15 inches.

Bill black, cere pale. Legs and toes fully feathered with light buff feathers.

Head yellowish brown, mottled with dark brown and white. Ear tufts $1\frac{1}{2}$ inches long.

Back mottled yellowish brown, grey, and black. Wings grey to yellowish brown, banded dusky black, long, reaching beyond the tail. Under parts grey or pale yellow mottled with dark brown in spots or streaks and crossed with fine transverse bars. Whole plumage very soft and downy, tail rather short, square, and barred.

Distribution.—Europe and Asia. This owl is found throughout China, visiting the Yangtse Valley in the winter.

SHORT-EARED OWL.

ASIO FLAMMEUS (PONT).

[*Asio brachyotus* (Blyth)]

Description.—Length 14 inches.

This Owl is very similar to *Asio otus*, differing from it in having very short ear tufts, a more yellowish cast to the plumage and the fact that the

plumage is not barred, but has only longitudinal spots and streaks of dusky black or brown.

Distribution.—Almost cosmopolitan.

This Owl is found in China generally, reaching the Yangtse Valley during the winter.

WHITELEY'S OWLET.

GLAUCIDIUM WHITELEYI (BLYTH).

Description.—Length 10 inches.

Beak greenish, cere brown. Legs yellowish, toes with a few stiff bristles. Iris yellow.

Plumage is brown crossed with narrow whitish bars. Abdomen and under tail coverts white streaked with brown. Tail with 6 to 8 white bars interrupted at the shaft of the feather.

In some specimens the whole upper parts, neck, sides, flanks, and thighs are suffused with rufous.

Distribution.—South and Central China. It is a common resident in the Yangtse Valley.

Nest and Eggs.—The nest is usually built in holes in old decayed portions of tall trees, or at times in the deserted nests of other birds. The eggs are white and roundish in shape.

Notes.—This is the little Owl that often awakens us at night with its blood curdling screech. A pair of these Owls drove some Magpies (*Pica pica sericea*) from an old nest in a tree on the Mission Compound at Kiangyin. They laid five eggs, all of which were hatched, though one fledgling was considerably under-size and disappeared from the nest. The young were fed chiefly on young frogs which were abundant in the rice fields at the time (June). When about half fledged the

young were taken from the nest and put in a cage on the verandah. The parents soon found them and continued feeding them at night until they were fully grown and were released.

The following Owls are also residents in the Yangtse Valley but are not often seen :—

Ketupa flavipes (Hodgs.), Tawny Fish Owl,

Otus glabripes (Swinhoe), Elegant Owl,

Otus semitorques (T. and S.), Half-collared Owl,

Glaucidium brodiei (Burton), Collared Pygmy Owlet.

Ninox japonica (T. and S.), Brown Hawk Owl, is a summer visitant.

Otus stictonotus (Sharpe), Spotted Pygmy Owl, is recorded as a migrant and

Bubo coromandus (Lath), Dusky Horned Owl, as a stray in the Yangtse Valley.

Family, *Caprimulgidae*, Goatsuckers, or Nightjars.

This is a well marked family of quite uniform appearance, the plumage of all its members being soft, and showing a mottling of brown, gray, black, and white. The bill is short, weak and flexible. The gape is cut far back, almost to the eyes. The nostrils are mostly tubular. In the typical members of the family the outer toe has only four joints, and the middle toe is long with its claw pectinated on the inside.

Nightjars are found in most parts of the world, but most abundant in the tropics. They are mainly nocturnal in their habits, and capture most of their food of insects on the wing.

The family has 130 species, of which 3 are found in China and one in the Yangtse Valley.

JAPANESE NIGHTJAR.
(GOATSUCKER).

CAPRIMULGUS JOTAKA T. AND S.

Description.—Length $10\frac{1}{2}$ inches. Bill small and weak with numerous rictal bristles. Eyes large, gape very large, feet weak.

Plumage a mixture of brown, grey and rufous with fine wavy lines, and on back and head large, long, black spots. White spot on the throat. Tail marked toward the extremity with large white spot save on the central rectrices. Tail obscurely banded.

Distribution.—Southern Asia, Japan, and the whole of China. This bird is a migrant passing the Yangtse Valley in May and October.

Nest and Eggs.—The eggs are laid on bare ground without any sign of a nest, sometimes under the shelter of some projecting object. There are two eggs of a dull white ground-color irregularly blotched with several shades of brown, the shell has a noticeable gloss.

Notes.—"It makes a peculiar noise like the knocking together of two pieces of wood. Perhaps this is what gives it the name of Nightjar. Another name is Nighthawk, and a third very common one is Goatsucker. The last has come from the fact that the bird has frequently been seen to hang around the udders of goats so that it has become a popular belief that it sucks the milk. As a matter of fact, it is the flies that the bird is after. Of a

beautiful brown-grey color, closely penciled and barred, the Nightjar is a handsome bird. Like the Swift it has an enormous mouth and long graceful wings."

Family, Micropodidae, The Swifts.

Swifts are small, compactly-feathered, pre-eminently aerial birds, with very long pointed wings in which there are ten primaries, and always less than nine secondaries. The tarsus is extremely short and the feet weak. The bill is short, somewhat curved, broad at the base, with a very wide gape. Swifts take their food of insects entirely on the wing, and possess unrivalled powers of flight.

Chaetura caudacuta (Lath), Spine-tailed Swift, and

Apus pacificus (Lath), Large White-rumped Swift, pass the Yangtse Valley on migration.

Family Picidae, Woodpeckers.

The species represented in the Yangtse Valley have four toes, two in front and two behind; the bill is very strong, straight, and chisel-like; the tail feathers are stiff and pointed, except in two species in China; the nostrils are concealed by bristles.

They are small or medium sized birds with strong legs and feet. The peculiar structure of the feet enables them to cling to the trunk or limbs of a tree, while the stiff pointed tail serves as a prop when resting. The heavy, sharp bill is used to cut away wood and expose grubs and other insects which form their food. These they impale on the spear-like tip of their long distensible tongue and draw

from their hiding places. The eggs are white, and are placed in a hole, hollowed out by the bird in a dead tree or limb.

This family possesses 250 species, of which 18 are found in China; 12 of these are peculiar to China alone. The Yangtse Valley has 4 species.

YANGTSE GREEN WOOD- PECKER.

PICUS GUERINI (MALH).

[Gecinus guerini (Malh)]

Description.—Length 10 to 11 inches.

Bill black above, yellow below.

Feet olive green. Iris white.

Back, scapulars, rump, and upper tail coverts soft grey washed with greenish yellow, washing heaviest on the rump. The amount of greenish washing varies very considerably. Head and neck bluish grey except that the lores and center of the crown are much darker. A black streak through the center of the nape and on either side of the head below the auriculars. The forehead is scarlet in the *male*. Throat grey, under parts greenish grey washed yellow. Wing feathers are very dark brown, spotted white and outer webs washed yellow. Under sides of the ^{wing} grey spotted white. The tail feathers are dull brown washed yellowish green and spotted yellowish brown.

The North China form (*Picus canus*) is decidedly more greyish, and the South China one (*Picus tancola*) more green, and both have more red on the head than the Yangtse Valley form (*Picus guerini*).

Distribution.—Central China. It is a rather common resident in the Yangtse Valley.

Nest and Eggs.—They nest in holes in trees and lay five or six glossy white eggs.

Notes.—This bird is rather common on our campus in Soochow picking over some old willow trees with a number of badly rotted areas, or quite frequently feeding on the ground along with the Blackbirds. Its loud, screechy call, made as it passes in its undulating flight from one tree to another, can be heard for quite a distance.

PIED WOODPECKER.

DRYOBATES CABANISI (MALH).
[*Dendrocopus cabanisi* (Malh)]
(*Picus cabanisi*)

Description.—Length $9\frac{1}{2}$ inches.

Bill black above, grey below. Toes green. Iris crimson.

Upper parts blue black. Forehead and about the eyes whitish. Auriculars grey. Side of neck white. *Male* has a spot of scarlet on occiput. Under parts white, more or less washed with brown or red. Abdomen and under tail coverts red.

"Edge of wing, under wing-coverts, and axillaries white."

Distribution.—Throughout China. It is a resident in the Yangtse Valley.

Nest and Eggs.—We have observed this bird picking its way into a pretty solid piece of slightly decayed wood. It was at work for some time, but has finally made its nest and is now (May 10th) sitting.

Notes.—One meets with this Woodpecker almost everywhere in China where there are trees which it may explore.

SPARK-HEADED WOODPECKER.

YUNGIPICUS SCINTILLICEPS (SWINHOE.)

[*Iyngipicus scintilliceus* (Swinhoe).]

Description.—Length 7 inches.

This little woodpecker is black above, with lower parts of the back white transversed by seven bars. Fore part of the crown grey. Two tufts of scarlet on the sides of the head of the male. A white stripe from eye to side of neck. Nape black. Throat grey bordered by black mustaches. All the rest of the lower parts grey with long brown markings. Greater and lesser wing coverts with large white spots. Remiges barred with white.

Distribution.—China generally. Resident, but not common, in the Yangtse Valley.

Nest and Eggs.—Similar to that of the other Woodpeckers.

Notes.—While this little Woodpecker is a resident in the Yangtse Valley, yet he is not nearly so frequently met with as Green and the Pied species.

CHINESE PICULET.

PICUMNUS CHINENSIS (HARGITT).

Description.—Length 4 inches.

The small of the woodpeckers. Its back is greenish yellow. Head maroon brown. Below pale yellow each feather marked with rounded black spot, forming bands on flanks and longitudinal streaks on the breast. The middle of the abdomen is saffron. Tail feathers soft, and not stiff and pointed as in other species.

Distribution.—Himalayas and Mountains of South and Central China. Rather an uncommon resident in the Yangtse Valley.

Nest and Eggs.—The Piculets nest in holes in trees and lay glossy, white eggs, similar to those of other woodpeckers.

Notes.—Abbe David observes that it prefers the bamboo groves as hunting grounds and often joins other small birds in swift flights through the thickets and coppice in quite different manner from other members of this family.

WRYNECK.

JYNX TORQUILLA L.

(Iynx torquilla L.)

Description.—Length six and one half inches.

“Beak and feet olive brown.

Upper parts reddish grey, irregularly spotted and lined with brown and black; a broad black and brown band from the back of the head to the back; under parts dull white, tinged with buff, and barred with dark brown, except on the breast and belly, where the markings become arrow-headed in form; outer web of the quills marked with rectangular, alternate black and yellowish spots: tail feathers barred with black zigzag bands.”

Distribution.—This bird is found throughout Europe and most of Asia, but is solitary in its habits and rather scarce. It is a migrant in the Yangtse Valley, passing in April and September.

Nest and Eggs.—“At all times, except during the nesting season, it is a silent bird, but at that time its loud, monoto-

nous, quickly uttered call is frequently heard. It does not excavate a hole for itself, but makes use of a natural or other cavity, especially in an orchard or lime tree, depositing on the bare wood or chips at the bottom its glossy white eggs, which number from seven to nine, or exceptionally as many as twelve."

Notes.—"The Wryneck is placed by anatomists next to the woodpeckers, and is like them in the form of its feet and the habit of perching vertically on the trunks of trees; but he does not dig into the wood with his beak, nor does he support himself with his tail, the feathers of which are soft as in most perching birds. He is a singular bird, differing from all others in form, coloring, language, and habits. His variously colored plumage, so curiously and beautifully barred and mottled, is most like that of the Nightjar; but his beauty appears only when he is seen very near. At a distance of twenty-five or thirty yards he is obscure in coloring, and is more remarkable for his attitudes and gestures, when seen on a tree trunk deftly and rapidly picking up the small ants on which he feeds. When thus engaged, he twists his neck, turning his head from side to side in a most singular manner; hence the name Wryneck. When taken in hand he twists his neck about in the same manner, and hisses like a snake, as he also does when disturbed during incubation; and on this account he has been called the Snake-bird. When held in hand, he sometimes swoons, and appears to be dead until released, whereupon he quickly recovers and makes his escape. Even more characteristic

than his contortions, hissings, and 'death-feigning', is his voice. It is an unmistakable and familiar sound of early spring—a clear, high pitched, far reaching note, reiterated many times—a sound that makes itself heard at a distance of a quarter of a mile. As a rule, this note is heard a few days before the cuckoo's call, and on this account, the wryneck is known as the cuckoo's mate, or messenger, or bodar, and is also called the cuckoo's maid.

"The Wryneck feeds chiefly on ants and their larvae, and, like the green Woodpecker, he goes to the anthills on common and uncultivated grounds; the insects are taken with the long retractile tongue, which is covered with an adhesive saliva, and which the bird when feeding, darts out and withdraws with lightning rapidity."

A stray *Picus canus* (L), North China Green Woodpecker, has been found in Chinkiang once.

ORDER, PASSERIFORMES, PERCHING BIRDS.

Passerine birds, with the exception of the genus *Cholornis*, have four toes, without webs, the first being on the same level as the others and directed backwards; it is as large as the middle toe, and the nail is usually longer than that of the middle toe. They are generally birds of small size, having variously shaped wings, with nine or ten primaries and nine secondaries. There are usually twelve tail feathers. Other characteristics are largely technical and need not be enumerated here.

This is a very large order, containing approximately 7,000 species, or nearly half of the known birds. Notwith-

standing the large number of specific forms, the structure is of a remarkably uniform type, and the group is more homogeneous than any other similar division of the bird family. Several subdivisions have been made on largely arbitrary grounds, but no two systematists agree.

We follow Dr. F. H. Knowlton in grouping the species which seem to show closest affiliation into families, with a synopsis of the characteristic features of each.

Family, Alaudidae, the Larks.

Larks have the tarsus blunt behind instead of sharp as in most of the birds of this order. The rear of the tarsus is scutellated much like the front. The hind claw is very long. The wings are pointed, with ten primaries, though the first is very short, and often practically obsolete. The edges of both mandibles are smooth except for a notch in the upper one. The head is often crested.

There are 115 species of Larks, all except four belonging to the old world, where they are most abundant in the Palearctic region. China has ten species of which only one reaches the Yangtse Valley.

THE SKYLARK.

ALAUDA ARVENSIS, L.

Description.—Length seven and one half inches. Bill dark brown above, paler below. Feet pale brown. Iris dark brown.

There is a rudimentary crest; a long straight hind claw; and feathers at the base of the bill are bristly.

Upper parts dark brown, each feather edged fulvous: and indistinct superciliary line; under parts white, or very pale fulvous, abdomen lighter; throat and checks white or slightly streaked, and breast and sides boldly streaked with black; wings and tail very dark brown, feathers edged lighter, two outer tail feathers mostly pale rufous or white.

Young birds have the crown feathers much rounded, and most of the feathers of the upper plumage, more rufous and tipped white; wing coverts broadly margined rufous.

The Skylark varies much both in size and color shades throughout its wide range, giving rise to quite a complicated nomenclature for the many sub-specific forms. As all forms seem to intergrade, it appears best to regard it as one species with many climatic races.

Distribution.—Europe, Asia, and North Africa; China generally. Common winter visitant in the Yangtse Valley.

Notes.—This is one of the favorite cage birds of the Chinese, and sings very sweetly in captivity, but is always heard to best advantage in the open, on some grassy slopes, especially at the foot of the hills, from March to June. The Chinese have rightly named it the "Messenger of Heaven"

Family, Motacillidae, Wagtails and Pipits.

The birds of this family have slender cone-shaped bills, which are always shorter than the head. The tarsus and toes are long and slender, and the claw of the hind toe is as long as the toe itself. The wings are long and pointed, the outer four or five of the nine primaries being

the longest. The inner secondaries are greatly elongated. The tail is never much shorter, and sometimes longer than the wings.

They are insectivorous birds, frequenting the open fields and plains, where they walk and run with ease. Their flight is undulating and peculiarly erratic.

Pipits resemble the larks somewhat, but may readily be distinguished by the tarsus being sharp behind, and by the longer outer primary. Their brownish streaked coloring, and much shorter tails easily separate them from the Wagtails. Their seasonal changes of plumage are very slight.

Wagtails have black, white, and gray plumage, or in some cases bright yellow, but all are devoid of streaks or mottling on the upper parts; there are often striking differences between the winter and the summer plumages. Their popular name comes from the nervous habit of vibrating the tail when standing or walking.

The family comprises about a hundred species distributed throughout the world. China has 24 species, of which 15 reach the Yangtse Valley.

KEY TO THE PIPITS.

The following key to the Pipits has been adapted to the species occurring in the Yangtse Valley, from that of Mr. E. W. Oates in "Fauna of British India."

a. Hind claw not exceeding hind toes in length;

a' Pale tip of inner web of penultimate tail feather very small, next feather never tipped;

a'' Streaks on lower plumage large, black, well-defined; light parts of tail feathers white;

a''' Urper plumage suffused with green, with small ill-defined streaks; supercilium white posteriorly; . . .

Anthus hodgsoni.

b. Hind claw exceeding hind toe in length;

b' Sides of body plain or faintly streaked;

b'' Lower plumage sandy buff, or fulvous, breast spotted and streaked;

. . *Anthus richardi.*

c'' Lower plumage vinaceous; . . ;

Anthus blakistoni, adult.

c' Sides of the body coarsely streaked with black or dark brown;

d'' Throat and breast cinnamon red; . *Anthus cervinus*, adult.

e'' Throat and breast whitish, or pale fulvous;

b' '' Upper plumage with fulvous margins; *Anthus cervinus*, young.

c' '' Upper plumage olive brown, dark centers; . . *Anthus japonicus*, young.

f'' Streaks on breast narrow, pale; *Anthus blakistoni*, young.

g'' Throat and breast white, feet pale; *Anthus japonicus*, adult.

h'' Above richly streaked black upon fulvous; *Anthus gustavi.*

RICHARD'S PIPIT.

ANTHUS RICHARDI, VIELL.

Description.—Length about seven and one half inches.

Bill, upper mandible dark brown, lower one paler. Mouth yellow. Tarsus yellowish brown, toes lighter, hind claw very long, not much curved. Iris dark brown.

Yellowish olive above, every feather dark brown in center, less distinct on the rump; pale yellowish supercilium;

white below washed with yellowish red, sides of throat and breast with a few long dark brown streaks.

Distribution.—Europe, Asia, and north Africa; passes the Yangtse Valley in small numbers in spring and autumn migration; breeds in Siberia.

Notes.—Seeböhm found this bird exceedingly abundant on the banks of the Yenesei. There is a small darker form of this Pipit (*Anthus infuscatus*) in Fokien, with a shorter tarsus and hind claw, which may be found in the Yangtse Valley.

RED THROATED PIPIT.

ANTHUS CERVINUS, (PALL).

Description.—Length six inches. Bill brownish black, yellowish at base. Tarsus yellowish flesh color; claws horn color. Iris brown.

A distinct reddish supercilium; chin, throat, and upper breast cinnamon red, with black streaks on the breast, light in the center and heavier at the sides; rest of the underparts yellowish, washed pink, with black spots on sides and flanks; feathers of whole upper plumage with black centers and pale rufous margins; wings and tail dark brown, edged yellowish, outer tail feather mostly white, next one slightly tipped white.

In *young birds* the supercilium is less distinct, and the rufous washing lighter, and there is a broad black band down each side of the throat.

Distribution.—Europe, Northern Africa, and all Asia; a winter visitant in the Yangtse Valley.

EASTERN WATER PIPIT.

ANTHUS JAPONICUS, T. AND S.

Description.—Length six and one half inches. Bill deep dusky above, lighter below. Tarsus pale horn color: Iris brown.

Yellowish brown above, feathers with darker centers, except on the rump and upper tail coverts; wings and tail dusky edged yellowish white; outer tail feathers mostly white, next ones tipped white on inner web; whole lower parts yellowish, young birds and adults in winter have the whole breast, sides of neck and flanks marked with coarse dusky black streaks; in breeding plumage these streaks are lacking.

This bird very closely resembles the American Water Pipit (*A. pennsylvanicus*), differing from it chiefly in the amount of white on the penultimate tail feather.

Another very closely allied species, the Petchora Pipit (*A. gustavi*, Swin.), is also found in the Yangtse Valley. It has a more yellowish cast to the upper plumage, and the dark streaks above and below are blacker and more distinct.

Distribution.—Eastern Siberia and Kamschatka, winters in China and Japan.

BLAKISTON'S WATER PIPIT.

ANTHUS BLAKISTONI, SWIN.

Description.—Length seven inches. Bill and tarsus dusky black. Iris brown.

Lores and sides of the head reddish; eyebrow reddish yellow; upper parts earthy brown, centers of feathers darker brown; under parts

dull white, with a tinge of reddish on the breast; the flanks with a few indistinct black streaks; wings and tail dusky brown, feathers edged lighter, except uter tail feathers mostly white.

Immature birds have the neck and breast faintly, and the sides plainly, streaked with dark brown.

This bird is practically identical with the European Water Pipit (*A. spinoletta*), differing from it chiefly in being slightly smaller.

Distribution.—Eastern Siberia and China; a winter visitant in the Yangtse Valley, where it is not uncommon. It is usually solitary, frequenting the banks of canals and pools, but is occasionally found in small parties.

EASTERN TREE PIPIT.

ANTHUS HODGSONI, RICHMOND.

[*A. maculatus*, Hodgs.]

Description.—Length six inches. Bill black. Iris brown. Tarsus flesh color. Eyebrow yellowish white, whiter and more distinct in summer.

Upper parts nearly uniform olive brown, the head and sometimes the mantle and back having narrow dusky streaks; foreneck and breast sandy buff, marked with narrow black spots, which are longer on the sides; lower breast and abdomen white; median wing coverts tipped with yellowish white; central tail feathers dark brown edged olive, others pointed, edged olive, and tipped white.

In autumn plumage the throat sometimes is of a fine buff color, and the black breast spots less pronounced.

Distribution.—India to the valley of the Amur, and China generally; winter visitant in the Yangtse Valley.

KEY TO THE WAGTAILS OF THE
YANGTSE VALLEY, ADAPTED
FROM OATES.

a. Hind claw much curved, shorter than hind toe;

a' Plumage black, white, and gray;

a'' Ear-coverts and sides of the neck always whitewashed;

a''' No black streak through the eye;

a'''' Outer webs of greater wing coverts entirely white, back black or dusky on the mantle; . . .

Motacilla leucopsis;

b''' A broad black streak through the eye;

b'''' Gray shoulders and back; . .

Motacilla ocularis;

c''' Shoulder always black, back gray in winter black in summer; . .

Motacilla lugens;

b' Plumage largely yellow and green; . *Motacilla boarula*;

c' Plumage olive green above, black bars on breast, white bars on wings;

. . *Dendronanthus indicus*;

b. Hind claw little curved, longer than hind toe;

d' Tarsus unmistakably shorter than one inch;

d'' Crown dark gray, supercilium absent or obsolete, cheeks blackish;

. . *Budytes borealis*;

e'' Crown dark blue gray, supercilium very broad and distinct, cheeks blackish, ear-coverts streaked white;

Budytes flavus similimus;

f'' Crown green concolourous with back, supercilium broad bright yellow;

Budytes flavus taiwanus;

e' Tarsus considerably longer than one inch;

g'' Back always ashy gray: . . .

Budytes citreola.

FOREST WAGTAIL.

DENDRONANTHUS INDICUS, (GM.).

(*Limonidromus indicus*, (Gm.)).

Description. — Length six inches. Bill, lower mandible dull white, upper brown. Tarsus pale white. Iris black.

A white eyebrow extending to the nape; crown, nape, and back olive brown; yellowish white below, the flanks tinted with olive; the breast has two black collars, the upper one complete, the lower one broken in the middle; upper surface of the wings dusky black, with three white transverse bands; upper tail coverts black; two middle tail feathers much shorter than the others and of a different color; outer tail feathers mostly white. This bird is regarded as a connecting link between the Pipits and the Wagtails.

Distribution.—India and all China, passing the Yangtse Valley in migration.

WHITE-FACED WAGTAIL.

MOTACILLA LEUCOPSIS, GOULD.

Description.—Length seven and one half inches. Bill black. Tarsus brownish black. Iris brown.

The plumage is a mixture of black gray and white, which varies according to age, and season. The marks which distinguish it from the other Pied Wagtails are, the white face, having neither black eyebrows nor mustache, and the back black in summer. For

changes in the plumage we give, from the "Catalogue of the Birds of the British Museum" the-Key to the Plumage of *Motacilla leucopsis*.

a. Forehead like the back, upper surface light ashy or pale olivaceous, least wing coverts like the back, median coverts white with a mesial streak of dark brown, dusky black patch on foreneck; *Young first plumage.*

b. Forehead white, upper surface gray, median wing coverts white, narrow black band on foreneck;
Young first winter.

c. Forehead white, head black, back gray or mottled black, least wing coverts black, broad band on foreneck; . . .
. . . *Adult, second winter.*

d. Forehead white, upper parts black, also least wing coverts, lower throat black, upper throat white, white on secondaries confined to inner web;
Adult breeding plumage.

e. Black extending on to chin, base of secondaries white on both webs; . . . *Adult final plumage.*

Distribution.—China generally; migrant in the eastern part of the Yangtse Valley, passing in considerable numbers in spring and fall breeds in the foothills around Mokanshan, and possibly elsewhere in the region.

Nest and Eggs.—Nests are built in the straw thatched roofs of native houses around the foothills of Mokanshan. They are frequently seen at the "first resthouse" on the way to Mokanshan from San Jao Pu.

It is a large cup-shaped nest of leaves and grass lined with hair. Eggs are grayish white streaked with brown and gray of various shades.

black gorget on the throat, and a black eye line, but this bird always has black shoulders, while the Streak-eyed Wagtail always has gray shoulders, in all phases of plumage.

For changes of plumage we give the British Museum Catalogue Key to the Plumage of *Motacilla lugens* ;

a. Outer secondaries entirely white, primaries white with black ends :

a' Black back and crown ;

a'' Back black mixed gray ; . . .

Adult male summer.

b'' Back black : . . .

Adult female summer.

b' Back gray, head black ; . . .

Adult both sexes winter,

b' Quills brown edged white ;

c' Back black ; . . .

Male first summer.

d' Back gray or mixed black ; . . .

Female first summer.

e' Back gray or tinged olive, head sometimes blackish, throat crescent black ; . . .

Young first winter.

e'' Back gray washed olive, no black on head, crescent dusky ;

Young first plumage.

Distribution.—China and Japan. Winter visitant in Yangtse Valley.

EASTERN GRAY WAGTAIL.

MOTACILLA MELANOPE, PALL.

(*M. boarula*, L.)

Description.—Length seven inches. Bill black ; Tarsus flesh color ; Iris brown.

In winter plumage, top of the head and back gray ; rump and upper tail coverts greenish yellow ; a white eyebrow, gray just below the eye ;

throat, chin, and fore neck white; under parts pale yellow, the under tail coverts much brighter, both sexes are very similar in winter plumage.

In breeding plumage; the *male* has a more distinct eye streak and some white feathers on the lower eyelid; top of the head darker; chin and throat black, each feather edged white; a broad white mustache. The *female* has a row of blackish spots on each side of the throat.

Distribution.—Europe and all Asia, passing the Yangtse Valley in migration.

GRAY-HEADED WAGTAIL.

BUDYTES BOREALIS, SUNDEV.

Description.—Length seven inches. Bill dusky black, base of lower mandible yellowish. Tarsus dark horn color. Iris brown.

Male in winter.—Top of head and neck bluish gray, a few of the feathers tipped greenish; back and rump greenish olive; upper tail coverts dark brown edged greenish olive; central tail feathers black edged olive, outer ones mostly white; wings brownish black feathers edged lighter; sides of the head grayish black, lighter on the ear coverts; under parts yellow, deeper on the breast, where there is some dark mottling; superciliary line faint or lacking.

Male in summer.—Top of the head becomes darker, sides of the head black; upper parts with distinct greenish yellow tinge; lower plumage yellow, with little or no dark mottling on the breast.

Female in winter same as the male; *in summer*, upper parts duller; top of head similar to back; mottling on breast plainer.

Immature birds in the fall, grayish brown above, with whiter margins to tail and wing feathers; lower parts largely white; spots on the breast very distinct, forming a gorget; broad yellowish white supercilium.

Distribution.—Europe, Asia from northern Siberia to India; migrant in the Yangtse Valley.

BLUE HEADED WAGTAIL.

BUDYTES FLAVUS SIMILLIMUS, L.

Description.—This species very closely resembles the Gray Headed Wagtail (*B. borealis*), but may be distinguished in the male, by the darker crown, and the white chin and mustache; in the female, by the darker green upper parts; and in both sexes, by the white streaks on the ear coverts, and the large, distinct, whitish supercilium.

Distribution and habits. The same as those of the Blue Headed Wagtail. It is also a migrant in the Yangtse Valley.

There are two other very similar species, also migrants in the Yangtse Valley, which may be met with:

The Green Headed Wagtail (*B. flavus taivanus*), which may be distinguished by a green crown, uniform in color with the throat, a broad yellow supercilium, and a yellow throat;

The Yellow Headed Wagtail, (*B. citreola*), may be distinguished by the bright yellow head and black mantle in

summer, yellow forehead in winter, and gray back at all seasons, in the male ; the female similar, but paler, and more of an olive yellow ; immature birds have the head and back a uniform brownish gray, a dull white eyebrow, and the under parts yellowish white.

Family, *Enicuridae*, The Forktails.

Forktails are trim, dainty birds between six and eleven inches long, with stout, straight and rather long bills, and strong legs. Their moderately rounded wings have ten primaries, the outer one being well developed. In typical forms the tail is very long, and well developed, but in the Little Forktail (*M. scouleri*), it is short and nearly square. This is a small group of three genera, and only a dozen species, only two of which reach the Yangtse Valley.

CHINESE FORKTAIL.

ENICURUS SINENSIS, GOULD.

Description.—Length eleven and one half inches. Bill black. Tarsus almost white. Iris brown.

Forehead, abdomen, under tail coverts, and rump white ; a white letter V is formed on the back by the rump and a white line across the tertials and wing coverts ; remainder of the plumage jet black, excepting white tips on the tertials and all the tail quills ; outer pair of tail feathers on each side entirely white ; tail deeply forked.

Immature birds have the head neck, and back chocolate brown ; chin and throat gray ; breast brown with yellowish streaks ; otherwise like the adults.

This bird has a peculiar habit of spreading and closing its tail when perched, and usually flies with the tail spread wide.

Distribution.—South China, as far north as the Yellow River. It is a resident in the Yangtse Valley, keeping largely to the hills with running water.

Nest and Eggs.—The nest is built on the bank of a stream, a ledge of rocks, or even a stump, concealed by overhanging ferns or foliage. It is a cup of moss, lined with fine grass, roots, and dead leaves. The eggs are smooth grayish white speckled with red and lilac spots.

Notes.—This bird haunts the mountain streams, taking its food of insects mollusks, and worms, mostly from the water, though it sometimes frequents Chinese farmyards, and will even feed from the filthy cess pools.

THE LITTLE FORKTAIL.

MICROCICHLA SCOULERI, (VIGORS).

Description.—Length five and one half inches. Bill black. Tarsus white. Iris dark brown. Forehead white; rest of the upper plumage black, with the exception of the white lower back, and the rump, which is white with a black band; throat and upper breast black; rest of the under parts white, the flanks mottled black; two outer pairs of tail quills white, others white at base, with black tips, the black increasing in area toward the central feathers. This species is readily identified by its short, almost square tail.

Distribution.—North India, south and central China; resident in the hills bordering the Yangtse Valley.

Nest and Eggs.—The nest is a strong, compactly built moss cup, lined with dead leaves, usually placed along the mountain streams. There are four white eggs in a clutch, lightly spotted with light red and lilac.

In habits this bird is very similar to the Chinese Forktail, but is not nearly so common.

Family, Timeliidae, The Babbling Thrushes.

This is a composite group of mainly Old World birds, about which there is much disagreement. The bill is decidedly thrush-like; the wings are short, rounded, and concave, so as to fit close to the sides of the body. The whole plumage is lax and soft. The outer of the ten primaries is comparatively large, and the plumage of the nestling is like that of the adult, though paler, both being unspotted.

This group contains over a hundred species, twenty-seven of which are met with in China, and six in the Yangtse Valley.

SPECTACLED LAUGHING THRUSH.

DRYONASTES PERSPICILLATUS, (GM).

Description.—Length thirteen and one half inches. Bill, dark brown above, lighter below. Tarsus, dark yellowish brown. Iris, brown. Forehead, lores, auriculars, and a patch around the eyes, black. This black area around the eyes accounts for the rather fanciful name, "The Spectacled

Laughing Thrush." Head, neck, throat, and chin, ashy olive. Back, rump, upper tail coverts, and wings, olive brown. Breast and abdomen ochraceous gray, the center of the latter being rufous. Tail, olive brown, darker toward tip. Whole plumage very loose and coarse.

Distribution.—Resident in central and south China. Common in the Yangtse Valley.

Nest and Eggs.—The nests are usually placed in the thickets around villages, and are about ten or twelve feet from the ground. They are composed of coarse grass, roots and small twigs, and are lined with fine dry grass, straw, or pine needles. There are three or four eggs in a clutch, glossy greenish white in color. There are two or three broods in a season.

Notes.—To say that this bird laughs requires quite a little imagination, though its harsh notes may have some little resemblance to a coarse laugh. They are usually found in small groups in the thickets, the year around.

There is another species, the *White-browed Laughing Thrush*, (*Dryonastes sannio*) sometimes met with in the hills. Its plumage is more rufous, and it is marked by white lores and cheeks, as well as a distinct white supercilium. ~~This bird has been taken on Mokanshan.~~

Species
on notes
proved to
be *Gamela*
ticollis

BROWN LAUGHING THRUSH. (Hwamei, or Womi).

TROCHALOPTERON CANORUM, (L).

Description.—Length nine and one half inches. Bill, yellowish brown. Tarsus brownish flesh color. Iris

brown. There is a white circle around the eyes, the white extending posteriorly as a stripe. Crown and upper back, olive rufous, with dark shaft lines to the feathers. Back and rump, uniform dark olive. Under parts bright yellowish rufous, with dark shaft lines to the feathers of the chin throat and upper breast, and the middle of the abdomen ashy gray. Tail and wings dark olive brown.

Distribution.—Central and south China, a common resident in the Yangtse Valley.

Nest and Eggs.—The nest is a large cup built up of leaves, coarse grass, and twigs, lined with finer material. It is usually placed low in a dense thicket. The eggs are greenish blue, marked with reddish brown.

Notes.—This is a very common, and much prized cage bird among the Chinese. It has the most varied song of any of the common birds of the Yangtse Valley, not only having quite a classic repertoire of its own, but seemingly able to add at will the notes of other birds.

When wild it prefers the hills, but often comes down to the thickets in the plains.

LESSER SCIMITAR BABBLER.

POMATORHINUS STRIDULUS, SWINH.
[*Pomatorhinus styani*, (Seehohm)].

Description.—Length seven to eight inches. Bill horny yellow, paler at tip, culmen brownish black. Tarsus greenish gray. Iris red. Crown olive brown. Neck bright rufous, especially at the sides. Long white eyebrow.

Auriculars black. Back, rump, and upper surface of the wings, dark cinnamon. Throat white. Breast olive tinted with rufous, each feather edged with white. Flanks, abdomen, and under tail coverts olive-gray. Tail and wings olive-brown.

Variations in shade of plumage are quite frequent. As a rule birds from west China are much lighter than those from the south.

Distribution.—Himalayas and all south China up to the Yellow River. Resident in the wooded hills of the Yangtse Valley.

Nest and Eggs.—The nest is an oblong dome, constructed entirely of leaves, those of the bamboo being preferred, with a lining of fine grass stems and moss. The eggs are white.

Notes.—These birds have a peculiar habit of singing a sort of response. One of them, presumably the male, perches well up in a bamboo or shrub, and gives a call of two whistled notes, and the other from a lower perch answers with a lower note in perfect cadence.

BROWN STREAKED HILL WARBLER.

SUYA CRINIGERA, HODGSON.

Description.—Length seven and one half inches. Bill in summer, black, in winter, brown. Tarsus fleshy pink, claws brown. Iris orange.

Above, the feathers are brown in the centers, and yellowish gray on the edges, with a rufous tin on the lower back and upper tail coverts, giving the back a streaked appearance. Sides of the head, neck, and sometimes the

breast, are faintly streaked with black. Breast and abdomen yellowish gray, flanks and under tail coverts light yellowish brown. Wings and tail rufous brown, the tail being long and graduated.

In summer the whole plumage is darker.

Distribution.—South and central China, resident in the Yangtse Valley.

Nest and Eggs.—The nest is a deep cup of grass, lined with grass down. It is usually placed near the ground in a shrub. The eggs are white, speckled with red, and there are sometimes as many as seven in a clutch.

Notes.—This is shy bird, and not at all common. It is a poor flier and mostly keeps to the rocky hill sides covered with scrub pines and undergrowth. It feeds on insects. Occasionally the male perches on a twig and utters a harsh song, which has been compared to the screech of the cicada.

The remaining member of this family recorded from the Yangtse Valley is the *Red-headed Babbler* (*Stachyrhidopsis ruficeps*). It is not at all common but Styan found it in the hills near Hangchow. It ranges south to India. It is olive green above, olive yellow below, with a chestnut forehead, crown, and nape. It is about the size of the Brown Streaked Hill Warbler (*Suya crinigera*), but the tail is not nearly so long.

Family, Pycnoptidae, The Bulbuls or Fruit Thrushes.

Bulbuls have rather short tarsi, and, as a rule, numerous rictal bristles. There are always some "hairs" springing from the neck, sometimes very in-

conspicuous, but never entirely absent. The shape of the wings and tail, as well as the coloration, varies quite widely. There is usually a crest.

Bulbuls are non-migratory, arboreal, and gregarious in their habits, and the majority have a melodious cheerful song. The name " Bulbul " is Persian for Nightingale, and though the two families of birds are quite different, has been applied to these birds from their habit of sometimes singing at night in the early summer, or spring.

Their food consists mainly of fruits, berries, and seeds.

This is an Old World family of about two hundred and fifty species, eight of which are found in China, and five in the Yangtse Valley.

CHINESE BULBUL (BLACK-HEADED BULBUL.)

PYCNONOTUS SINENSIS (GM).

Description.—Length eight inches. Bill, tarsus, and iris, black.

Top of the head black, with the nape and a spot behind the eyes white. Back and rump gray mixed greenish yellow. Wings and tail gray tinted greenish yellow. Throat white. Breast and flanks grayish brown washed with yellow.

Distribution.—South China, a very common resident in the Yangtse Valley.

Nest and Eggs.—Nests are placed in the shrubbery of gardens, or thickets. They are quite fond of building in the thick, green foliage of the mulberries early in the spring, and many nests are destroyed every year, when the first crop of leaves are gathered to feed the silk worms.

The nest is a cup of coarse grass tops with the flower spikes attached lined with fine roots. The eggs are yellowish white, spotted and blotched with lavender and gray.

Notes.—This very common bird gathers in loose flocks during the winter. It is very fond of feeding on the fruit of the China-berry tree (*Melia azedarach*), visiting the tree several times during the day, eating only one or two berries each time. It has a very sweet bubbling song.

The *Yellow Vented Bulbul*, (*Pycnonotus xanthorrhous*) is a much rarer bird, keeping almost entirely to the hills. The upper plumage is brown, and the spot behind the eye has a brownish cast, but the most striking mark is the bright yellow of the under tail coverts, from which it takes its popular name.

WHITE-HEADED BLACK BULBUL.

HYSIPETES LEUCOCEPHALUS, (GM).

Description.—Length nine and one half inches. Bill and tarsus orange red. Iris brown.

The head and neck are white. The rest of the body above is black, excepting some white on the point of the wing. The under parts are a very dark gray, with some of the feathers of the middle breast, abdomen, and lower tail coverts, tipped white.

Young birds are grayish all over.

Distribution.—Central and south China, resident in the hills of the

Yangtse Valley, and sometimes found on the plains.

Nest and Eggs.—The nest is a compact shallow cup of moss coarse grass and strips of bark, lined with pine needles and grass. The eggs are yellowish white, spotted all over with lavender gray and very dark red.

Notes.—These birds are quite common in the bamboo covered hills around Mokanshan. They have a very pleasing song usually uttered on the wing, something like the syllables, "whit-la clee-er", repeated in various combinations, with emphasis on the last syllable. They also have a cry much like the American Cat-bird (*Galeoscoptes carolinensis*) which is usually uttered from a perch.

The *Blue Bulbul*, (*Hysipetes amaurotis*), is a south China species, occurring in the Yangtse Valley only as a stray. The upper plumage is brown washed with blue. The throat and breast are bluish gray, and the abdomen white.

BLACK-HEADED FINCH-BILLED BULBUL.

SPIZIXOS SEMITORQUES, SWINH.

Description.—Length eight inches. Bill yellow, thick and Finch-like. Tarsus purplish-brown. Iris brown.

Crown, cheeks, chin, and throat black. Nape gray mixed with black. There is a white collar extending from the sides of the nape around the throat, and some white mixed with the black of the cheeks. Rich yellowish green above, breast and flanks lighter.

Abdomen and under tail coverts yellow. Wings and tail yellowish black, the tail having a terminal black band.

Readily identified by its Finch-like bill.

Distribution.—Central and south China, resident in the Yangtse Valley.

Nest and Eggs.—The nest is very delicately made of small twigs, roots, and grass flower tops, often with some silk fiber interwoven, and lined with roots and hair. It is attached to the tree with cobwebs, or fine twigs, or both.

The eggs are yellowish white, heavily streaked with brownish red and grayish violet.

Notes.—This bird, while found in the plains, seems to prefer the foothills. It is quite abundant in summer around the base of Mokanshan.

Family, Muscicapidae, Old World Flycatchers.

Flycatchers constitute a very large group of small, Old World birds, which must not be confused with the American Flycatchers (Tyrannidae), from which they are entirely distinct.

Typically, the Old World Flycatchers have a broad flat bill, in some extremely broad, in others less so. All, however, have both edges of the mandibles smooth, the upper one with a simple terminal notch. There are numerous hairs over the nostrils. The tarsi and feet are too weak for walking on the ground. This quite distinguishes them from the Thrushes, which they resemble in the mottled plumage of the nestlings.

Flycatchers are almost strictly insectivorous, catching most of their

prey on the wing. They are rather solitary in habit, usually frequenting trees of open woodlands and gardens.

This large family consists of nearly one hundred genera, and over seven hundred species, of which twenty-one are found in China, and eleven reach the Yangtse Valley.

RED-THROATED FLYCATCHER.

SIPHIA ALBICILLA (PALLAS).

[*Muscicapa albicilla* (PAL.)]

Description.—Length four and three quarters inches. Bill dark brown. Tarsus black. Iris brown.

Male. Fulvous brown above, sides of the face gray, with a white circle around the eyes. Chin and throat bright chestnut. Breast and abdomen whitish gray. Upper tail coverts black. Wings brown, feathers edged fulvous. Two middle pairs of tail feathers black, others more or less white at base.

Female has the throat white, and the under parts somewhat suffused with buff.

Young are mottled yellowish and brown above, and yellowish below.

Distribution.—India and China, migrant in the Yangtse Valley. In Europe the place of this bird is taken by the Red-breasted Flycatcher (*Siphia parva*).

The Red-throated Flycatcher is common all over China in the migrating season. It is sociable in its habits, and is often seen in gardens, where it takes its food of insects on the ground rather than on the wing as is the habit of most of the Flycatchers.

BROWN FLYCATCHER.

ALSEONAX LATIROSTRIS, (RAFFLES).

Description.—Length five inches. Bill black, lower mandible yellowish at the base. Tarsus dark brown. Iris chocolate.

A white circle around the eyes, and continued as a line to the base of the bill. Grayish brown above, passing into black on the tail and wings. Secondaries and greater coverts bordered with tawny. Below white, breast and flanks washed with grayish brown, but without spots or streaks.

Distribution.—Siberia to India, and all over China and Japan. A common migrant in the Yangtse Valley, passing in April, May, and September. Breeds in the Himalayas and North China.

SIBERIAN FLYCATCHER.

HEMICHELIDON SIBIRICA, GM.

Description.—Length four and three quarters inches. Bill, upper mandible dark brown, lower yellowish. Tarsus brownish black. Iris brown.

Cheeks gray, mixed with whitish. A ring of white feathers around the eye, and an indistinct white patch on the lower throat. Dusky brown above, feathers of the head with dark centers, and those of the wings edged paler. Smoky brown below, the breast, abdomen, and under tail coverts, washed whitish. Tail plain brown.

The young have the feathers much mottled with white above, and below are lighter than the adult and mottled with brown.

Distribution.—China, Japan, and south eastern Asia. Migrant in the Yangtse Valley, breeding in the Himalayas, north China, and Siberia.

GRAY-SPOTTED FLYCATCHER.

HEMICHELIDON GRISEICTICTA, SWINH.
(*Muscicapa grisola*, L.)

Description.—Length five inches. Bill black, yellow at base of lower mandible. Tarsus black. Iris brown.

Brown above, feathers of the top of the head with dark centers, and those of the wings edged fulvous. Lores and cheeks whitish, with an irregular dark moustachial streak, and a buff ring around the eye. Lower plumage white, spotted and streaked brown.

This bird very closely resembles the Brown Flycatcher (*Alseonax latirostris*), but may be distinguished by the spots on the feathers of the lower parts.

Distribution.—All China and Malaya. Passes the Yangtse Valley in migration, when it is found in the woods on the hills, but is not very common.

ROBIN FLYCATCHER.

POLIOMYIAS LUTEOLA, PALL.

Description.—Length five inches.

Male.—Upper parts grayish black, with grayish white shafts to the feathers of the back. Wing quills brownish margined lighter. Median and greater wing coverts white. A small white spot behind the eye. Upper tail coverts black. Tail quills black with white bases, except the two central ones. Under parts deep orange except the abdomen, which is white.

Female.—Olive brown above, yellowish gray on the lores, and paler below, otherwise like the male.

Young like the female, but with two buffish bars on the wings.

Distribution.—China, Siberia, and Japan. Migrant in the Yangtse Valley.

Not very common in China, but to be found almost anywhere in small numbers in the migrating season.

TRICOLOR FLYCATCHER.

XANTHOPYGIA XANTHOPYGIA, (HAY)
(*Xanthopygia tricolor*, Blyth.)

Description.—Length four and one-half inches. Bill and iris black. Tarsus bluish.

Male.—General color of upper plumage black. Rump, breast, and abdomen, bright yellow. A very conspicuous white eyebrow. Wings black with a white band on the inner greater coverts, and along the outer web of one of the inner secondaries.

Female.—Olive brown above, paler yellow on the rump and under parts, obscure grayish streaks on the throat and chest.

Distribution.—China, Siberia, and Malaysia. Summer visitant in the Yangtse Valley.

Nest and Eggs.—The nest is built in holes in trees, usually near the water. It is a very fragile structure of fine leaves, roots, grass, and hair. There are five light pink eggs, speckled brownish red and purple, heaviest toward the larger end.

The *Narcissus Flycatcher*, (*Xanthopygia narcissina*, Temm.) closely

resembles this bird, but differs in having a yellow eyebrow, and no white line on the secondaries. It is also a migrant in the Yangtse Valley.

Another migrant, the *Blue and White Flycatcher*, (*Cyanoptila cyanomalaena*, Temm.) may be distinguished by the blue of the upper parts, the white at the base of the tail feathers, and the breast, black in the male, yellowish white in the female.

INCE'S PARADISE FLYCATCHER.

TERPSIPHONE INCII, GOULD.

Description.— Length male seventeen and one-half inches, of which the tail is about twelve and one-half inches. Female eight inches. Bill and eyelids cobalt blue, angle of mouth green. Tarsus greenish. Iris brown.

Male has two phases of plumage. In the rufous phase, the general color of the upper parts is a deep rufous, wing quills black along the ribs. Whole head a greenish iridescent black. Breast ashy gray. Rest of the under parts white washed grayish on the flanks. In the white phase, the head remains the same, but the rufous of the upper parts, wings and tail becomes white, with black shaft lines to many of the feathers.

The change of plumage has caused some confusion in the nomenclature of this bird, and there has been much difference of opinion as to how and when the change takes place.

Female, very similar to the rufous phase of the male, except the head is duller as is the rufous of the upper parts, and the lower parts are cream white. The tail is much shorter.

Distribution.—China and Malaysia. A rather uncommon, but striking summer visitant in the Yangtse Valley.

Nest and Eggs.—The nest is a compact cup, placed in the fork of a branch, about fifteen feet high. It is made of leaves, grass, roots, moss, and hair, bound together and decorated with cobwebs, lichens, and spider web cases. There are four yellowish eggs, spotted deep brown and purple.

JAPANESE PARADISE FLYCATCHER.

TERPSIPHONE PRINCEPS, TEMM.

Description.—Very similar to Ince's Paradise Flycatcher in the rufous phase, except that the whole upper plumage in the male and the top of the head in the female, has a purplish gloss, and the under parts in both sexes are creamy white.

Distribution.—Breeds in Japan, and winters in Malaysia, passing the China coast in migration.

The only other Flycatcher recorded from the Yangtse Valley is a stray from extreme south western China, (*Cryptolopha valentini*, Hart. or *C. tephrocephala*, And.) and is not likely to be met with.

Family, Turdidae, The Thrushes.

Thrushes are medium sized or small birds, with a relatively long and a distinctly notched bill, more or less thickly set with rictal bristles. The tarsus is strong, long or medium, and booted, i. e. covered with long plates and not with small scales.

The wings of ten primaries are usually long and pointed, and the tail of twelve feathers, usually square or rounded. The plumage is mostly plain brown or black, often varied with white, gray, chestnut or rufous. There is a decided tendency to a white breast spotted brown, and the plumage of nestlings is almost always spotted.

Thrushes are largely terrestrial and insectivorous in their habits, though some of them also eat fruits.

The family numbers between five and six hundred species, with representatives in all parts of the globe. Twenty-three species reach the Yangtse Valley.

CHINESE BLACKBIRD.

PLANESTICUS MANDARINUS (Bp).

[*Merula mandarina* (Bp).]

Description.—Length eleven and one half inches. Bill yellow. Tarsus, feet, and claws, nearly black. Iris brown.

Mature birds are dull black all over the entire body. In younger birds the throat and breast are quite perceptibly streaked, and the black is decidedly more dusky.

Distribution.—Central and south China, west even to Szechuen Province. A common resident in the Yangtse Valley.

Nest and Eggs.—The nests is usually built some distance above the ground, in the large forks of trees, or on the wide base of a limb. It is made of grasses or small twigs, cemented together with mud; frequently bits of papers are found embedded in the structure. We have recently found a nest built in an old nest of a Magpie.

There are two broods each year, the first hardly getting out of the nest and about, before the other follows.

If undisturbed the birds frequently make use of the same nest for several consecutive years, simply repairing it each season.

The eggs are pale green, blotched and speckled with red, over underlying spots of violet.

Notes.—This is one of our finest songsters during the breeding season. The song is quite varied and sweet. It also has an alarm cry very much like that of the American Catbird (*G. carolinensis*). In habits, however, it much more closely resembles the American Robin (*P. migratorius*).

GREY-BACKED OUSEL.

TURDUS HORTULORUM, SCHLATER.

Description.—Length nine and one half inches. Bill orange yellow. Tarsus, feet, and claws, yellow.

Upper parts dark gray without markings, slightly shaded with olive on the head. Under parts white, throat and breast having triangular black spots in the female, and a deep washing of gray, with fewer spots in the male. Sides of the breast, axillaries, and flanks, golden rufous, the depth of color varying with individuals.

Distribution. — China generally, though more common in the south. Passes the Yangtse Valley in migration.

THE GRAY OUSEL.

— —
TURDUS OBSCURUS (GM).

Description.—Length eleven and one half inches.

Head, throat, and neck, dark ash gray. A white eyebrow, and a few white spots below the eye. Back, wings, and tail, olive brown, the latter with a small white patch at the tip of the outer feathers. Breast and flanks rufous yellow, abdomen white.

The *female* has a white throat with a few dark spots.

Distribution.—Winters in China Japan and Malaysia, and breeds in Siberia. Passes the Yangtse Valley on migration.

THE PALE OUSEL.

— —
TURDUS PALLIDUS (GM).

Description.—Length nine and one half inches. Bill dark brown, yellow at the base of the upper mandible. Tarsus, feet, and claws, pale brown.

Upper parts olive brown. Neck, sides of breast, and flanks, gray. Breast and abdomen grayish white. Wings and tail grayish brown. There is no distinct eyebrow, but a circle of yellow skin around the eyelids.

Distribution.—Winters in Japan, Formosa, and south China, passes the Yangtse Valley on migration to breed in the Valley of the Amoor.

Notes.—This bird is as a rule solitary, preferring thick cover. However, it sometimes comes to open places to feed, and may even be seen on our lawns hunting for insects.

THE RED-TAILED OUSEL.

TURDUS NAUMANNI, TEMM.

Description.—Length nine and one half inches. Bill brown, pale at the base of the upper mandible. Tarsus, feet, and claws, brown. Iris dark brown.

Head and neck brown, with a white eyebrow. Upper parts warm brown, feathers bordered with ashy. Throat and breast rusty red, the centers of the feathers sometimes black, forming spots, and each feather bordered with white. Abdomen mostly white. Flanks and under tail coverts rusty red. Wings brown, feathers edged with pale yellow. Outer tail feathers rusty red, the central ones shaded more or less with dark brown.

The intensity of the colors, and the number of spots on the throat and breast, are subject to considerable variation, but the brownish red breast, and rusty red tail serve as marks for identification.

Distribution.—Eastern Asia, occasionally reaching Europe. Breeds in Siberia and Manchuria, and winters in the Yangtse Valley.

Notes.—These birds gather in small flocks to feed in cultivated ground. They are especially fond of the mulberry groves in winter, where they may be frequently found, either singly or in small groups.

This bird often approaches very close to the Dusky Ousel (*Turdus eunomus*) but never intergrades with it.

THE DUSKY OUSEL.

TURDUS EUNOMUS (TEMM).

(*Merula fuscata*, Pall.)

Description.—Length nine and one half inches. Bill black above, yellow below. Tarsus dull brown, Iris brown.

Head, auriculars and neck brown. A conspicuous white eyebrow. Back and rump dusky brown, feathers bordered with pale rufous. Tail dark brown. Throat yellowish, with black spots. Breast brown, with a sort of necklace of black spots. Flanks brown spotted black. Abdomen mostly white. Under tail coverts reddish brown.

This bird frequently approaches quite closely to the Red-tailed Ousel (*Turdus naumanni*), but the brown tail, the necklace of black spots on the breast, and the greater amount of black on the under parts serve to distinguish it.

Distribution.—Europe, northern Asia, China, and Japan. Winters in the Yangtse Valley in small numbers, much more plentiful in migration.

The *Brown Japanese Ousel* (*Turdus chrysolaus*) may also occur in the winter season. It is also similar to the Red-tailed Ousel, and the Dusky Ousel, but may be distinguished by the entire absence of an eyebrow, or of dark spots on the breast. It is resident in Japan, but some individuals cross to China in the winter.

THE VIOLET WHISTLING THRUSH.

MYIOPHONOUS CAERULEUS (SCOP).

Description.—Length thirteen inches. The whole plumage is dark indigo blue,

all the feathers being tipped with a brighter blue.

Distribution.—All China, though rare in the north. Resident in the higher mountains of the Yangtse Valley. Quite common on Kuling.

Nest and Eggs.—The nests are placed along the rocky banks of mountain streams, usually in some niche near the water. They are built of earth and fine roots, with an inner lining of rootlets and dead leaves, frequently of the bamboo. There are four dull reddish eggs, speckled more or less with other shades of red.

These birds are said to desert their nests on very slight provocation.

Notes.—This is a very conspicuous bird, inhabiting the borders of the wild mountain streams, and living a solitary life. It takes aquatic insects and larvae from the water, but does not dive like the Dipper (*Cinclus souliei*). It has a very sweet song.

The Siberian Ground Thrush (*Cichloselys sibiricus*) and *White's Ground Thrush* (*Oreocincla varia*), occur as migrants in the Yangtse Valley, usually in the hills, but are rarely met with.

Three species of Rock Thrushes have also been recorded, the *Red-bellied Rock Thrush* (*Petrophila manilla*), a rare resident in the gorges of the upper Yangtse, and on the rocky islands off the coast;

The *Red-breasted Rock Thrush* (*Petrophila solitaria*), a stray in the higher hills of the Yangtse Valley; and the *White-throated Rock Thrush* (*Petrophila gularis*), a rare migrant.

THE DAYAL BIRD.

COPSYCHUS SAULARIS (LINN.)

Description.—Length nine and one half inches. Bill black. Tarsus plumbeous. Iris brown.

Male.—Plumage black, iridescent; wing coverts, abdomen, sides, and four lateral retrices on each side, white. Flanks and under tail coverts dark gray.

In the *female*, grayish brown replaces the black of the upper parts and gray below.

Distribution.—India and south China. Summer visitant in the Yangtse Valley. Has been taken in summer on Mokanshan.

Nest and Eggs.—It builds a rough nest in holes in trees or old walls, laying five greenish white eggs, marked with reddish brown.

Notes.—This bird may be seen in numbers in any village of south China, flying about the trees and undergrowth, even venturing into houses. Although singing a gentle song, it is a born fighter. Its food consists principally of insects.

THE DAURIAN REDSTART.

PHOENICURUS AUROREUS (PALL).

(*Ruticilla aurea*, Pall.)

Description.—Length six inches. Bill black. Tarsus black. Iris deep brown.

Male.—Crown and nape gray, rest of the head, back, and wings black. A large white spot in the center of the secondaries. Rump, tail, and under parts, bright rufous, but the tail has the two median retrices brown.

Females have the upper parts olive brown, and the under parts lighter,

washed with red. Wings have a small white bar. Tail nearly same as in the male.

Distribution.—Eastern Asia. A very common winter visitant in the Yangtse Valley, but some seem to breed on Kuling.

Nest and Eggs.—A nest taken from the inside of a veranda on Kuling closely resembled that of the American Pewee Flycatcher (*Myiochanes virens*).

Notes.—This bird is often seen in the shrubbery around our homes during the winter. Its striking colors, and nervous habit of starting or twitching on its perch, readily identify it. The call is a simple plaintive note, uttered with monotonous regularity.

THE PLUMBEOUS WATER REDSTART.

RHYACORNIS FULIGINOSUS (VIGORS).

Description.—Length five and one half inches. Bill black. Tarsus dark brown. Iris brown.

Male.—Plumage dark lead blue. Rump and tail brownish red. Wings brownish black with bluish margins to feathers.

Female.—Dull olive brown above, white below, with crescentric brown markings on each feather. Upper and lower tail coverts, and base of tail quills, white.

Distribution.—Eastern Asia. Resident on the mountain streams of the Yangtse Valley.

Nest and Eggs.—The nest is a cup of moss, lined with hair, or fine roots. It is placed on a shelf of rock or the bank of a stream. There are three

greenish white eggs, thickly spotted brown.

Notes.—These pretty little birds are seen along the mountain streams, where they live usually in pairs. From the vantage ground of a projecting rock, they will dash out over the stream after a passing insect, returning immediately to their starting point.

THE RUBY THROAT

CALLIOPE CALLIOPE (PALL).

Description.—Length seven inches. Bill light brown, white at gape. Tarsus pale plumbeous. Iris brown.

A prominent white eyestripe and moustache. Lores and space under the eye black. Upper parts olive brown. Throat brilliant ruby red, each feather margined white at the tip, and the whole patch bordered by black. Breast gray, Abdomen and under tail coverts white. Wings and tails brown, the latter edged on the outer webs with olive brown.

The *female* has the throat white, and the eyestripe buff.

Distribution.—India, and south China during the winter, nesting in Siberia and northern Asia. Passes the Yangtse Valley in migration.

THE BLUE WOODCHAT.

LARVIVORA CYANEA, PALL.

Description.—Length five and one half inches. Bill, upper mandible dark brown in the male, pale brown in the female, lower mandible pale. Tarsus flesh color. Iris brown.

Male.—Bright blue above and almost pure white below. Sides of the body washed with blue. Wings and tail brown, washed blue on the outer webs. Region at the base of the bill, lores and a line under the cheeks are black.

Females and young males are olive brown tinged rufous above, dull white below, fulvous at the sides with a slight mottling of brown.

Distribution.—Europe, Siberia, and all China, passing the Yangtse Valley in migration.

Notes.—This bird frequents the thick cover, keeping almost entirely to the ground, and is usually found singly or in pairs.

THE BLUE-TAILED ROBIN.

IANTHIA CYANURA (PALL).

Description.—Length five and one half inches. Bill black. Tarsus reddish brown. Iris brown.

Male.—There is a white circle around the eye, and a white line to the base of the bill. Brilliant blue above, and pure white below. Flanks with a tint of blue, olive spots on the side of the neck and breast forming a more or less distinct band across the breast. The sides in both sexes are washed with golden rufous. The wings are dusky brown, with a slight bluish tinge in the male, and yellowish in the female. The tail appears blue in flight.

Female and young males, are olive above, and dull white below, tinted with olive.

Distribution.—Siberia and China. A winter visitant in the Yangtse Valley.

Notes.—These little birds are fairly common in the shrubbery in the winter, though rarely more than one is seen at a time.

Other members of this family which have been recorded from the Yangtse Valley are:

The *Blue Throat* (*Cyanosylvia sueccia robusta*) occurs as a rare migrant. The male has a bright blue throat, with a chestnut spot in the center, a black and then a chestnut band below.

One other *Woodchat* (*Erithacus sibilans*) sometimes passes on migration. It is a small reddish brown bird with a red tail.

The *Eastern Stonechat* (*Pratincola maura*) is a rare migrant, and the *Gray Stonechat* (*Oreicola ferrea*), breeds on the hills of the upper Yangtse. Neither of these are likely to be met with.

Family, *Cinclidae*, The Dippers.

Dippers are compact, plump-bodied birds, with very stout legs, short, rounded, and very concave wings, and a short tail of twelve feathers. They are decidedly Wren-like in appearance, and like the Wrens have no rectal bristles. The whole plumage is very loose, with a thick covering of down beneath the outer contour feathers.

Their food consists chiefly of aquatic insects and their larvae, taken from the shallows of the swift streams which they frequent.

This is a small family of a single genus, and about a dozen species, divided between the Old and the New Worlds. China has three species, of which one is found in the Yangtse Valley.

SOUTH CHINA DIPPER.

CINCLUS PALLASI SOULIEI, OUSTALET.

Description.—Length eight and one half inches. Bill, black. Tarsus, black, toes gray. Iris brown.

The plumage is uniform brownish black all over, in adult birds of both sexes, except for a few white feathers on the eyelids.

In *young* birds the feathers of the upper plumage are edged rufous, and those below gray; the tail and wing feathers are narrowly tipped white.

Distribution. — China generally, though rare in the north. Resident in the Yangtse Valloy, along the mountain streams.

Nest and Eggs.—The nest is a large domed structure, built of moss among rocks or the roots of trees near the water. The eggs are white.

Notes.—This Dipper is fairly common along the mountain streams, where it plunges fearlessly into the swift current after its food. It does not swim with its feet, but wades under water, and can propel itself through the water by the use of its wings. It is often seen flying swiftly along a stream just above the surface of the water, uttering its single whistled note, either while on the wing, or from a perch on some rock.

Family, Troglodytidae, The Werns.

In this Family the bill is slender, long, and compressed, curved more or less downward toward the tip. The rictal bristles are obsolete. The anterior toes are united at the base. The wings are short, concave, rounded, with ten primaries, the fourth to the eighth

being the longest. The tail is short, graduated, and usually carried erect. The plumage is mostly dull in color, with brown or gray predominating.

Wrens are usually found on low shrubs, or trees near the ground, where they feed largely on insects.

Only a few of the 125 species belonging to this family are found in the Old World. China has five species, and the Yangtse Valley one.

THE EASTERN WREN.

ANORTHURA FUMIGATA (T. & S.)

Description.—Length three and one half inches. A yellowish eyebrow. Plumage dark rufous brown, a little lighter on the under parts. Rump, wings, and tail, with many fine transverse black bars. Feathers on the sides of the head and the neck with light centers. Lower breast to under tail coverts barred.

This bird differs from the European species (*Anorthura parvulus*) chiefly in being slightly darker.

Distribution.—Europe and Asia, including North China and Japan. A winter visitant in the Yangtse Valley.

Family, Sylviidae, The Old World Warblers.

The Old World Warblers must be clearly distinguished from the American, or Wood Warblers (*Mniotiltidae*), which are an entirely different Family.

The Sylviidae have a rather slender bill, both mandibles with smooth edges, or the upper one only with a simple notch. The tarsus is booted; the nostrils are clear of the line of the forehead; and the tongue is non-tubular. The wings are comparatively short and

broad, and the tail contains twelve feathers.

They are small birds, usually of plain plumage. Many species resemble each other so closely that it is difficult to distinguish them without having the bird in one's hand.

The sexes are alike with few exceptions. The young, while having the same color pattern as the adult, are more highly colored.

Warblers are mainly insectivorous, though some also take small mollusks, and, to a limited extent, fruit.

The Family consists of between five and six hundred species, divided among sixty-five genera. China has sixty-three species, seventeen of which reach the Yangtse Valley.

PALLAS' GRASSHOPPER WARBLER.

LOCUSTELLA CERTHIOLA, L.

[~~Locustella ochotensis~~ (Midd).]

Description.—Length five and one half inches. Bill yellow. Tarsus white. Iris brown.

A narrow indistinct yellowish white eye-stripe. Above the feathers are dark olive, bordered rufous, having fine black streaks on the back and especially on the head. In old birds there is a rufous olive collar behind the nape without streaks. Throat and abdomen yellowish white. Breast pale yellowish brown, rest of the under parts olive in adults, either not streaked at all, or with only a few tiny marks on the sides and breast. In winter the yellow tinge is lacking. Tail feathers black margined rufous, and broadly tipped white, this forming a distinguishing mark for the species.

Young birds in first plumage up to October have more yellow on the lower parts, the throat and breast distinctly spotted, and the dark centers and rufous edges of the upper feathers more distinct. Later, from October to November, the rufous edges increase in size, and the spots disappear from the throat and breast. Adult plumage is assumed during the winter.

All three phases of plumage may be met with in the fall, but only the adult phase in the spring.

Distribution.—This Warbler breeds in eastern Siberia, passing the Yangtse Valley on migration to winter in India.

STREAKED GRASSHOPPER WARBLER.

LOCUSTELLA LANCEOLATA, TEMM.

Description.—Length five inches. Bill dark brown, yellow at the base of the lower mandible. Tarsus white. Iris brown.

Eye-stripe almost obsolete. Upper parts olive brown, the feathers all having conspicuous blackish centers. The lower parts are white, with a varying amount of yellow washing, most of the feathers being streaked black. Sometimes the upper throat, abdomen, and lower tail coverts are without streaks. The tail is plain russet brown with no white tip above or below, serving to distinguish it from Pallas' Grasshopper Warbler.

Distribution. — Eastern Europe, Siberia, and China generally, passing the Yangtse Valley on migration to winter in Burmah and India.

GRAY'S GRASSHOPPER
WARBLER.

LOCUSTELLA FASCIOLATA, GRAY.

Description.—Length seven inches. Bill dark brown above, yellowish below. Tarsus flesh color. Iris brown.

The upper parts are nearly uniform warm russet brown. Throat grayish white, abdomen lighter, and breast darker. Sides of the body, flanks, and under tail coverts, olive or ochraceous brown. The larger size will serve to distinguish this from the other Grasshopper Warblers.

Distribution.—Breeds in Siberia, and passes Japan and the China coast to winter in the Malay Archipelago.

EASTERN GREAT REED
WARBLER.

ACROCEPHALUS ORIENTALIS (T. & S.).

Description.—Length seven and one half inches. Bill dusky above lighter below. Tarsus dark horn color. Iris brown.

An indistinct yellowish eye-brow. Upper parts olive washed with rufous. Below yellowish white, usually with numerous brown streaks on the throat and upper breast. Sides of breast and flanks pale olive brown, sometimes with a yellowish tint. Wings and tail dark brown, feathers edged lighter.

Distribution.—Siberia, Japan, all China, and Maylasia. Breeds in the Yangtse Valley and north, wintering to the south.

Nest and Eggs.—The nest is built among high reeds usually quite near or over the water. It is attached to

the stems of several reeds, just above high water line. The shape varies according to position. It is built of grasses, roots, and weeds, usually lined with grass or reed tops. The eggs are greenish, variously splotted with browns and purples.

Notes.—These Warblers are rarely found away from the marshes or water courses, where they may be heard all through the breeding season, singing their loud rather harsh song. They are great skulkers, and are much more difficult to see than to hear.

SCHRENCK'S REED WARBLER.

ACROCEPHALUS BISTRIGICEPS, SWINH.

Description.—Length five inches. Bill brown, lower mandible yellowish at base. Tarsus plumbeous flesh color. Iris brown.

Upper parts russet brown, lighter on the rump and upper tail coverts. Wings and tail brown, edged russet on the outer webs. Tail rounded. Below white tinted with olive, except on the chin and throat. Yellowish on the sides of the neck, flanks, and under tail coverts. A very distinct yellowish eyebrow, with a black stripe above. This double eyebrow makes the bird easy to identify.

Distribution.—Range and habits are very similar to to the Great Reed Warbler, but it is not nearly so common, and is more frequently found away from the water.

Another Reed Warbler which may be found in summer is the *Paddy-field Warbler* (*Acrocephalus agricola*). It is about the same size and coloration

as Schrenk's Reed Warbler, but lacks the double eyebrow, and is rarely found away from the water.

CHINESE BUSH WARBLER.

HORORNIS CANTURIANS, (SWIN).

(*Cettia canturians* (Sw.))

Description.—Length male six and one half inches. Female five and one half inches.

Bill brown, paler on the lower mandible. Tarsus brownish flesh color. Iris hazel.

Male.—Olive brown above, with a reddish cast in winter. Tawny below, sides of the breast brownish, chin, throat, and abdomen, white. Broad rather indistinct yellowish white eyebrow. Lores and a band behind the eye dusky.

Female.—Similar to the male but considerably smaller in size, with the dark line behind the eye indistinct, and more reddish borders to the tail feathers.

For a long time the female was regarded as a separate species on account of the rather remarkable difference in the size of the two sexes. It was known as *Horornis minuta*, until the error was pointed out by Mr. J. D. La Touche in 1906.

Distribution. — China, Formosa, Hainan, and India. Resident in the Yangtse Valley, which is the northern limit of its winter quarters. It is quite scarce here in the winter, but more abundant in summer.

Nest and Eggs.—This Warbler builds a domed nest with an entrance

near the top. It is a loosely constructed nest, the outer portion being largely made of coarse dead leaves, such as grasses, bamboo, etc. The lining is made of softer and finer materials such as feathers, downy grass tops, and fine, fibrous, stems and rootlets.

The nests are generally placed in thick, low bushes on the hill sides and are placed close to the ground.

There are usually four or five eggs in a clutch, and they vary in coloring from a light red to dark brick red, the former being the more common color. Sometimes there are slight marking of a deeper tint.

SOUTH CHINA BUSH WARBLER.

HORORNIS FORTIPES (HODG.)

(Cettia fortipes, Hodg.)

Description.—Length four and a half inches. Bill pale brown. Tarsus dark brown. Iris hazel.

Olive brown tinged rufous above. Yellowish brown or almost white below. Flanks brown. An indistinct yellowish eyestreak. Lores and behind the eye dark brown. Wings and tail dark brown edged rufous. Both sexes same size.

Distribution.—West and south China to the Himalayas. Resident in the Yangtse Valley, chiefly on the hills, though only a few remain for the winter.

Nest and Eggs.—The nest is built in a low bush. It is a rough dome-shaped structure of grass and leaves, lined with feathers. The entrance is at the side. The four eggs are a glossy chocolate red, darker at the large end.

RUFIOUS FAN-TAIL WARBLER.

CISTICOLA CISTICOLA TINNABULANS
(SWINHOE).

Description.—Length four and one half inches, tail slightly longer in the winter. Bill flesh color, darker on the culmen. Tarsus reddish yellow. Iris light brown.

Dark brown above, the feathers of the head and back bordered with rufous and gray. Rump rufous. Throat and abdomen whitish, flanks and breast washed with rufous. Tail fan-shaped, with transverse stripes of rufous, brown, black, and white. The rufous shade is less prominent in the winter.

Distribution.—China generally. A common resident in the Yangtse Valley.

Nest and Eggs.—The nest is a deep tubular pocket of felted grass-down fastened by cobwebs to a clump of standing grasses. Its location varies from a few inches to more than a foot above the ground. There are usually five greenish white eggs, splotted with various shades of red and purple.

Notes.—It is hard to see this little bird on the ground as it creeps along among the grasses. When flushed, it will alight on a weed stalk for only an instant to take observations, and then drop to the ground again. It is often heard, however, as it flies about high in the air repeating its shrill call, "pete, pete, pete," though the sound is very difficult to locate. As it comes to the ground, the call is changed to a sharp "chip, chip, chip," so different in sound that one does not readily associate the two calls with the same bird.

The Chinese boys, unable to locate the flight call, "pete," often explain that it is the call of the earthworm!

PALLAS' WILLOW WARBLER.

REGULOIDES PROREGULUS (PALLAS).

Description.—Length three and one half inches.

Olive green above, the head darker. The crown has an irregular median yellow stripe. Rump yellow. Below white, washed with yellow, slightly olive on the flanks. A yellow eyebrow extending to the nape. The greater and lesser wing coverts bordered with yellow, forming two wing bars. Wings and tail brown, feathers edged greenish.

Distribution.—Siberia, China, and India. A migrant in the Yangtse Valley. Breeds in the Himalayas at considerable altitudes.

YELLOW-BROWED WILLOW WARBLER.

REGULOIDES SUPERCILIOSUS (GM.)

Description.—Length four and one half inches. Bill brown, yellowish at the base of the lower mandible. Tarsus brownish flesh color. Iris brown.

Upper parts olive, darker on the crown. Wing feathers brown, edged with greenish, and tipped white. Two distinct wing bars. Tail quills edged yellowish green on the outer webs. Below white, sides of breast and abdomen pale olive yellow. The crown with a faintly marked yellow median stripe.

Distribution.—Europe and Asia, Passes Yangtse Valley on migration. a few remaining in north China to breed.

CROWNED WILLOW WARBLER.

ACANTHOPNEUSTE CORONATA (TEMM).

Description.—Length five and one half inches. Bill large, upper mandible brown, lower yellowish. Tarsus plumbeous. Iris hazel.

Crown greenish brown, with yellow median stripe. A long prominent yellow eyebrow. Rest of upper parts yellowish green, washed with brown on the back. Wings brown, feathers edged yellowish green. Two distinct yellowish wing bars. Below yellowish white, deeper yellow on the under tail coverts. This Warbler is readily recognized by the large size of its bill, and by the yellow median stripe on the crown, and the yellow under tail coverts.

Distribution.—Siberia, China, Japan, Java, and India. A migrant in the Yangtse Valley, usually passing in April.

ARCTIC WILLOW WARBLER.

ACANTHOPNEUSTE BOREALIS (BLAS.)

Description.—Bill dusky, yellowish at base of lower mandible. Tarsus yellowish flesh color. Iris brown.

Upper parts olive green, lighter on the rump. Greater wing coverts yellow, or gray at their ends. A long yellow or whitish eye-brow. Below white, washed with yellow. Sides of the breast olive gray.

In *summer*, the back is grayer, the pale tips on the wing coverts almost disappear, and there is less yellow on the under parts.

Distribution.—North-eastern Europe, across Asia to Alaska, Malay Archipelago, Japan, and China generally. Migrant in the Yangtse Valley, more abundant in spring.

PALE-LEGGED WILLOW WARBLER.

ACANTHOPNEUSTE TENELLIPES
(SWINHOE).

Description.—Length five inches. Bill dusky brown, pale at the base of lower mandible. Tarsus pale. Iris brown.

Above olive brown, washed yellow, deepest on the rump. Wings brown, olive. Two yellowish wing bars, edged yellowish the upper one indistinct. A narrow yellowish eye-streak. Lower plumage buffy white, deeper on the flanks and vent.

Distribution.—China, Japan, Malaysia, and India. Breeds in the north, passing the Yangtse Valley on migration.

Family, Regulidae, The Kinglets.

The Kinglets are a small family of dainty little birds, with the soft, lax plumage of the Tits. They have a short, straight, slender, slightly notched bill; oval nostrils, which are covered by a single peculiarly shaped feather, or a tuft of feathers; and sparse rictal bristles. The wings are rounded, and longer than the emarginate tail.

The Family comprises a single genus of seven or eight species, very widely distributed. Only one species reaches the Yangtse Valley.

THE GOLD CREST.

REGULUS CRISTATUS, KOCH.

Description.—Length four inches.

Forehead, supercilium, and ear coverts gray, rest of the upper plumage dull green, yellowish on the rump. A deep orange striped down the middle of the crown, bordered on either side by two others of black. Wings and tail brown, edged yellowish green. Two yellow bars on the wing coverts, and a dark patch on the primaries. Below pale buff.

Distribution.—Europe and most of Asia, reaching the Yangtse Valley in winter.

Family, Hirundinidae, The Swallows.

The Swallows are a well defined group, characterized by long, pointed wings, with nine primaries; short, flat, triangular, deeply cleft bills; and more or less emarginate, deeply forked tails, of twelve feathers. Their tarsi are short, and the feet weak, fitted only for perching.

Swallows are preeminently insectivorous, feeding on flying insects, which they take while on the wing.

They are to be distinguished from the Swifts by their radically different structure, in spite of their similarity of habits.

The family is composed of over one hundred species, distributed in all parts of the world. China has nine species, three of which reach the Yangtse Valley.

THE SAND MARTIN.

RIPARIA RIPARIA, (L).

Description.—Length five and one half inches. Bill black. Iris brown. Tarsus dark brown. Legs and feet are naked, with the exception of a few small feathers near the insertion of the hind toe.

Upper parts, cheeks, and a broad bar on the breast, grayish brown. Throat, fore parts of neck, belly, and under tail coverts white. Wings and tail dark brown, the latter margined whitish, rather short, and forked.

Young birds have all the feathers of the upper parts margined rufous, the chin and throat fulvous and the breast brown.

Distribution.—Europe, Africa, and Asia. A summer visitant in the Yangtse Valley.

Nest and Eggs.—This martin breeds in holes and crevices in precipitous cliffs on the sea coast, or in other suitable places, but it prefers to excavate a hole in a perpendicular bank of clay, not too stiff for it's weak bill to mine. They perch against the surface and pick out the hole a few particles at a time, in this way making deep tunnels into the earth. A suitable location will often attract a large number of Sand Martins, and the surface will be riddled with their holes. The hole slants upward, and is from three to four feet in depth, and two or three inches in diameter. At its extremity the gallery is widened to form a chamber about six inches in diameter, where a bed is made of dry grass, with a few feathers for a lining.

Male and female birds take turn in boring, working only in the morning, the rest of the daylight hours being spent in feeding and play. They lay four to six pure white eggs.

THE EASTERN HOUSE SWALLOW.

HIRUNDO GUTTURALIS, (SCOP).

Description.—Length six and one half inches. Bill black. Iris black. Tarsus brown.

Upper parts blue black. Throat and upper breast rufous, followed by a black band, broken in the middle. Remainder of the under parts whitish. Tail deeply forked, with a row of white spots at the base. These spots are often visible as the bird circles in flying.

Distribution. — Mongolia, China, Japan, Malaysia, and India. A common summer visitant in the Yangtse Valley.

Nest and Eggs.—These birds seem to prefer the inside of Chinese houses for a nesting place, and their presence is considered a good omen. All sorts of little devices are put up to attract them, and their nests are carefully protected. The nest is made of mud, mixed with bits of straw, paper, grass, and similar materials. It is fixed to a rafter, or plastered to any convenient upright surface. The cup is rather shallow, and is frequently lined with feathers. The eggs are four to six in number, and vary much in shape, and markings. The ground color is white, spotted with shades of brown, and purplish gray.

THE GOLDEN BACKED
SWALLOW,
(MOSQUE SWALLOW.)

HIRUNDO NIPAENSIS, HODGSON.

Description.—Length seven inches. Bill black. Iris dark brown. Tarsus dusky, claws black.

Above blue black. Rump and lower back rich reddish golden yellow. Sides of head and nape, rufous, and finely striated with black. Breast and abdomen yellowish gray, finely streaked with black. Tail deeply forked.

Distribution.—Mongolia, China, and India. A summer visitant in the Yangtse Valley, arriving a few days later than the Eastern House Swallow.

Nest and Eggs.—These Swallows are more common in the country than in town, and seem to prefer houses near the hills as their nesting places. The nest is oblong, something like a crooked bottle with a large mouth, through which it is entered. It is constructed of mud mixed with some sticks and straw. It is attached to the rafters, or cemented to any convenient surface. The eggs are similar to those of the Eastern House Swallow.

Family, **Campephagidae, Cuckoo Shrikes,**
or **Minivets.**

Minivets have a short, stout, moderately notched and hooked bill. The nostrils are nearly concealed by nasal feathers, though the rictal bristles are but slightly developed. The wings are long and pointed. The tail is moderately long and of varying shape. The plumage is soft and shrike-like, but the feathers of the lower back and rump have more or less stiffened shafts.

This Family is composed of about a dozen genera, including over 175 species, all natives of the old World. The Yangtse Valley has four species.

THE GRAY MINIVET.

PERICROCOTUS CINEREUS,
LA TRESU.

Description.—Length seven and one half inches. Bill and tarsus black. Iris brown.

Male.—Ashy brown above. Below dull white, tinged green on breast and flanks. Crown and nape black. Forehead white, a black band through the eye to the nape. Wings dark gray with an indistinct white bar across the center. Four central tail quills black, outer ones black at the base and white toward the tip.

Female.—Similar to male but has a narrower white forehead, gray crown and nape, and more white on the wings.

Young birds similar to the female, but with a yellow tinge to the plumage.

Distribution.—All China and the Philippines. Passes the Yangtse Valley on migration, but is not very common.

SWINHOE'S MINIVET.

PERICROCOTUS CANTONENSIS,
SWINHOE.

Description.—Length seven and one half inches. Bill and tarsus black. Iris brown.

Male.—Forehead gray. Lores black. Top of head, back, and wing coverts, dark ashy brown, rump and upper tail coverts paler. Wings dark brown, white tips to the greater coverts, and

an indistinct white patch at the base of the secondaries. Four central tail feathers dark brown, others more or less white. Lower plumage pale yellowish brown.

Female.—Similar to male but paler above, wing spot well defined, and tinged yellow.

Distribution.—India and China as far north as Shantung. A rare summer visitant in the Yangtse Valley.

Nest and Eggs.—The nest is built of twigs, and is placed on the broad branch of a tree. Its sides are perpendicular, and there is usually no bottom, the limb on which it is placed, serving the purpose. The eggs are bluish gray, thickly spotted with brownish red, yellow or purple over gray under markings.

The *Lesser Scarlet Minivet* (*Pericrocotus brevirostris*) which is bluish black above and scarlet below, with a scarlet wing band, and rump, and a white abdomen, may possibly occur as a migrant, as it ranges from northern India to Manchuria.

BLACK-WINGED MINIVET.

CAMPEPHAGA MELANOPTERA, RUPPEL.

Description.—Length nine inches. Bill and tarsus black, inside of the mouth yellow. Iris brown.

General color of plumage pale gray. Wings and tail iridescent black, wing quills edged lighter. Outer tail quills broadly tipped white, others narrowly so. Vent and tail coverts whitish.

The young are mottled with yellowish white, and have some dark bars across the breast.

Distribution.—India and southern China. A rather rare summer visitant in the Yangtse Valley.

Nest and Eggs.—The nest is a shallow cup of twigs, coated with lichens and cobwebs, and placed on the limb of a tree. The eggs are greenish white, marked with browns and purple.

Family, Dicruridae, the Drongos or King Crows.

Drongos may be distinguished by their black plumage, and their forked tails, of ten feathers, the outer ones being, in some cases, prolonged and rolled or expanded at the end. They have strong Crow-like bills, the edges of both mandibles being smooth, except for a single notch in the upper one. All have strong bristles at the base of the bill. The sexes are alike, and the plumage of the nestling like the adult, except paler.

Drongos are entirely insectivorous, feeding on the wing by darting from a perch after passing insects, like a Flycatcher. They are remarkable for their courage, fighting viciously, and readily attacking Crows, Hawks, and other large birds.

The sixty two species of the Family are confined to the Old World. China has six species, three of which reach the Yangtse Valley.

THE BLACK DRONGO.

BUCHANGA ATRA, HERMANN.

Description.—Length twelve inches. Bill black. Tarsus black. Iris red.

The entire plumage is iridescent black. The tail is long and deeply forked, the outer feathers curling up slightly at the end.

Young birds are duller, with white tips to the feathers of the lower parts, and under wing coverts.

Distribution.—All China. A summer visitant in the Yangtse Valley.

Nest and Eggs.—The nest is built in trees, often near dwellings. It is composed of grass and fine twigs, covered with cobwebs. There are four or five eggs, either pure white, or pale pink, spotted with brownish red.

Notes.—This bird frequents trees near marshes or other water. The gizzard of one opened in July contained a large number of small black beetles.

THE HAIRY-CRESTED DRONGO.

CHIBIA HOTTENTOTTA, (L).

Description.—Length twelve and one half inches. Bill and tarsus black. Iris brown.

Whole plumage brilliant iridescent black. Feathers of the neck and breast pointed. A few long hairs form the crest. Tail long and forked, the lateral retrices distinctly curled.

Distribution.—India and China. A summer visitant in the Yangtse Valley.

Nest and Eggs.—The nests are built in bamboos or high trees. They are usually fastened to the smaller twigs near the top, and are very difficult to get at. They are frail in appearance, but are really quite strongly built of fine twigs, roots, moss, and leaves. There are four or five eggs of a deep creamy pink ground color, variously splotted and speckled with red, purple, and gray.

Notes.—These birds seem to keep largely to the hills in the Yangtse

Valley. They are quite common among the large bamboos on Mokanshan in Chekiang Province.

The *White-Cheeked Drongo* (*Buchanga leucogenys*), which is a light gray color, with an oval white spot on each side of the head, surrounding the eyes, occurs as a rare summer visitant in the hills.

Family, Ampelidae, the Waxwings.

Waxwings have a slightly hooked bill, notched at the tip; the gape is broad; the nostrils linear, and nearly concealed by soft feathers.

They are small arboreal birds, with pointed wings in which the outer primary is so small as to be almost imperceptible. They have a crest of soft blended feathers.

In two species the tips of the secondaries are marked with horny, bright red, wax-like drops, from which they take their popular name. These curious growths seem to serve no purpose except for ornamentation.

This is a small family of a single genus, and only three species, two of which are found in China, and in the Yangtse Valley

THE BOHEMIAN WAXWING.

AMPELIS GARRULUS, L.

Description.—Length eight inches.

The general color of the plumage is a dark silky gray, lighter on the lower breast, and abdomen, and suffused with reddish on the crown. Throat black. Under tail coverts chestnut. Tail tipped with lemon yellow. Several of the secondaries are marked with white or yellow at the end, and in adult birds

tipped with a small wax-like coral red prolongation of the shaft, from which the bird is called "Waxwing."

In *young birds*, a streak of waxy red color appears on the feather shafts before the waxy tip develops.

Distribution.—Europe and northern Asia as far south as the Yangtse Valley in winter.

THE JAPANESE WAXWING.

AMPELIS JAPONICUS, (SIEBOLD).

Description.—Length seven inches. General color of plumage dark silky gray, similar to the Bohemian Waxwing (*Ampelis garrulus*), but the lesser wing coverts are bordered with dull crimson, and the tail has a subterminal band of bright red, and the under tail coverts are red. The primaries have at the outer end a short narrow spot of white. The secondaries are tipped with red, but lack the wax-like tips.

Distribution.—Siberia, north China, Japan, and Formosa. A rare winter visitant to the Yangtse Valley.

Family, Laniidae, the Shrikes.

This is a Family about which there is much lack of agreement, as taken here it includes only the true Shrikes, whose characteristics may be given as follows: they are robust, stocky birds of small size, with lax plumage, and a very strong bill, both hooked and notched. The round nostrils are located near the base of the bill, and are partly covered with feathers and bristles. The wings are short, rounded and powerful. There are ten primaries, of which the outer is usually more than half the length of the next one. The tail is either graduated or

square, but never forked. The tarsi are short, and scutellated, and the feet are moderately strong.

Shrikes feed on insects, small reptiles, animals, and birds, which they kill by striking or siezing with their strong bills. They do not use their feet to hold their prey as do the Raptorial birds.

They all have the peculiar habit of impaling their prey on thorns or sharp twigs, probably to hold it while they tear it pieces. They often kill more than they can eat, and leave their victims impaled, where they dry in the sun.

With two exceptions, this is an Old World Family, numbering over seventy species, thirteen of them being found in China, and seven or eight in the Yangtse Valley.

THE EASTERN GRAY SHRIKE.

LANIUS SPHENOCERCUS, CAB.

Description.—Length twelve inches. Bill and tarsus black.

Plumage clear gray above, shading into white on the forehead and upper tail coverts, and pure white below. A black stripe through the eye and over the ear coverts. A white eyebrow. Greater and lesser wing coverts black. Primaries white at the base, and black on the terminal half. Secondaries white at the outer end. Central retrices black, outer ones white.

This Shrike is very closely allied to the Gray Shrike of Europe (*Lanius excubitor*), differing from it in having more white on the wings, and a longer tail.

Distribution.—Eastern Asia, including China and Japan. Breeds in southern Siberia, and winters south to the Yangtse Valley.

The *Gray-backed Shrike* (*Lanius tephronotus*) is recorded as of doubtful occurrence in the Yangtse Valley. It differs in having the tail and upper tail coverts reddish brown, with more or less of a rufous wash to the whole upper plumage in young birds.

THE RED-BACKED SHRIKE.

LANIUS SCHACH, LINN.

Description.—Length eleven inches. Forehead, and the region about the eyes and auriculars, black. Crown gray. Back gray, more or less mixed with rufous. Under parts light gray, washed with rufous. Wings black. Tail dark brown, graduated, and about five inches long.

Distribution.—Central and South China. A common resident in the Yangtse Valley.

Nest and Eggs.—This species nests in the low, brush-covered hills. It builds, in a bush or a clump of sword grass, a large, deep, cup-shaped nest, of twigs, roots, leaves, and dry grass, lined with fine grass, and grass tops. There are from four to six yellowish green eggs, spotted various shades of dark red and gray, the spots being much heavier at the larger end.

THE PHILIPPINE RED- TAILED SHRIKE.

LANIUS LUCIONENSIS, LINN.

Description.—Length seven and one half inches.

Crown and nape, gray in the adult, brown in the young. Rest of the upper plumage grayish brown, rufous on the rump and upper tail coverts. A white eyebrow, and a black band from the nostrils to the auriculars. Throat and abdomen white, rest of the under parts washed with rufous. Wings brown, coverts more or less bordered with rufous. Tail rufous brown, tipped paler.

The *young* of the year have many black lunules above, but these are lacking in the adults.

Distribution.—The Philippines, Japan, and China. A summer visitant in the Yangtse Valley, though probably only a few pairs remain to breed.

Nest and Eggs.—Similar to those of the Red-backed Shrike.

The Japanese Red-tailed Shrike (*Lanius superciliosus*) which has the whole of the upper parts, including the crown and nape, rich chestnut, also occurs in the Yangtse Valley as a migrant.

The Indian Brown Shrike (*Lanius cristatus*), also recorded as a migrant, is very similar, but a paler reddish brown above.

Immature birds of the three foregoing species are very difficult to distinguish, and all three may be found to occur in the Yangtse Valley in the fall. Though the occurrence of the last named species is regarded as doubtful.

THE BULL-HEADED SHRIKE.

LANIUS BUCEPHALUS, T. AND S.

Description.—Length eight and one half inches. Bill deep horn color,

lighter on the edges and base of lower mandible. Tarsus black.

Male.—Upper parts ruddy brown, redder on the head and neck. Under parts are marked with many delicate lunules, or transverse bars. Ear coverts black. Secondaries tipped and bordered with rufous.

Female.—She is more uniform in color and has a darker tint on the upper parts. Ear coverts brown. The under parts more heavily marked with brownish black lunules.

Young birds similar to the adults in each sex, except that the males lack the deeper red of the head and neck, showing a uniform ruddy brown above.

Distribution.—Eastern Asia. A winter visitant in the Yangtse Valley, leaving usually in February to nest in Manchuria.

Notes.—During a heavy snow in February we saw one of these little Shrikes attack a Tree Sparrow (*Passer montanus*), which was feeding with a number of others on the snow. After a struggle of some minutes the Shrike succeeded in killing the Sparrow, apparently by gripping its neck. It then carried it about fifty feet to a shrub, by very short flights, sometimes grasping it with its bill, and sometimes in its claws. After considerable work, it hung the Sparrow in the crotch of a limb, and ate off its head and most of the neck before leaving it. Although the Sparrow was left hanging there for several days, until the snow had melted, the Shrike did not return to it again, so far as we could tell.

THE THICK-BILLED SHRIKE.

LANIUS TIGRINUS, DRAPIEZ.

[*Lanius magnirostris* (Swin).]

Description.—Length seven and one half inches. Bill very large and heavy, black, pale plumbeous blue at base. Iris brown. Tarsus pale plumbeous blue.

Crown, nape, and upper back gray. Forehead, and sides of head black. Back, rump, and tail coverts, rufous, with black lunules. Tail russet, obsoletely barred and tipped white.

The young are gray below, no black on the face, and upper parts reddish brown.

Distribution.—China generally, a summer visitant in the Yangtse Valley. Both young and adult birds have been taken on Mokansan in July.

We find no account of the nest or eggs.

Family, Sittidae, the Nuthatches.

Nuthatches are stocky little birds, with slender, acute bills, about as long as the head; a short tarsus, scutellated in front, and covered with two entire longitudinal plates behind; and a very long hind toe, while the front ones are of unequal length. The wings are long and pointed, with ten primaries. The tail is short, nearly even, of twelve soft, broad, feathers.

Nuthatches climb with great ease about the trunks of trees, or the face of cliffs, assuming all sorts of positions, but they never make use of their tails for support as do the woodpeckers. The Nuthatch has been described as a bird with the "bill of a Woodpecker, and the tail of a Titmouse."

Their food consists chiefly of insects, though they occasionally take nuts, which they wedge into cracks in order to open them with their sharp bills. This habit is responsible for their common name.

This Family includes about sixty species, widely distributed throughout the world. China has three species.

The only species which reaches the Yangtse Valley is the *Chinese Nuthatch* [*Sitta caesia sinensis* (Verr.)]. It differs from the Nuthatch (*Sitta caesia*) of western Europe only in being slightly smaller. It is bluish gray above, and reddish below, with some white on the throat, and a white eyebrow. It is resident in the hills, but rarely seen in the Yangtse Valley.

Family, Paridae, the Titmice.

The Titmice, or Tits, have a short, stout, unnotched, conical bill. The nostrils are covered with nasal feathers. The wings are short, and rounded, and the tail varying in length and shape.

They have soft, lax, plumage; the sexes being alike, and the young paler, but retaining the same color pattern.

This Family contains over two hundred species, covering the whole world, except South America, Australia, and Polynesia. China has twenty seven species, and the Yangtse Valley six.

THE LESSER GRAY TIT.

PARUS MINOR, T. & S.

Description.—Length five inches. Bill black. Tarsus grayish black. Iris brown.

Top of head and sides of neck intense black, with bluish iridescence. Cheeks white. Middle of breast and abdomen dull black, rest of the under parts dull gray. A yellowish green band separates the black nape from the gray of the back. Rest of the back rump and upper tail coverts bluish gray. Tail black, washed with gray above the outer feathers edged white. Wings dull black, with a white bar, and bluish gray edges to secondaries and tertials. Immature birds have a yellowish washing over the whole plumage.

Distribution.—China and Japan. Common resident in the Yangtse Valley.

Nest and Eggs.—The nests are hidden away carefully in hollow trees, holes in walls, banks, or similar places. The nest is simply a shallow bowl, or a hollow pad, of dry grass roots, moss, feathers, hair, or such material, adapted in size and shape to the space it occupies. A clutch consists of from five to seven white eggs, speckled with two shades of red.

Somewhat similar, but much more rare is the *Yellow Tit* [*Pardaliparus venustulus* (Swinhoe)], which has the gray of the back and rump washed with yellow, and a yellow abdomen. It is a winter visitant in the upper part of the Yangtse Valley, and has been once recorded from Mokansan in April.

THE MARSH TIT.

PARUS PALUSTRIS, LINN.

Description.—Length four and a half inches.

Head and nape black. Back and wings brownish gray. A black spot on the throat. Breast and abdomen gray. This bird varies considerably over its wide range, and has been divided into numerous subspecies, all of which intergrade.

Distribution.—British Isles, across Asia to Japan. A rare resident in the Yangtse Valley, more common in North China.

Nest and Eggs.—The nest of this bird, like that of some of the other Tits, is usually placed in decayed stumps or hollow trees where holes are available, though this bird has been known to dig a hole for its nest in rotten wood. The excavation is lined with soft materials, such as mosses and hair, tightly pressed together.

There are generally five or six eggs to a clutch and the ground color is pure white or white with a yellowish tinge, and this is blotched or spotted over with a rusty red.

THE SILVER-THROATED TIT.

ÆGITHALOS GLAUCOGULARIS
(GOULD.)

Description.—Length five inches. Bill black, very short. Tarsus black.

Crown black, with a fawn colored stripe down the center to the nape. Back bluish gray, wings dusky black. Tail black, with outer feathers edged white, as long as the body, and graduated. A silver gray spot on the throat. Breast and abdomen very light reddish gray.

Young birds are more brown above. The gray throat patch is lacking, and the whole throat and breast are rufous brown.

Distribution.—Northern, western, and central China, and Mongolia. A common resident in the Yangtse Valley.

Nest and Eggs.—This Tit prefers the coniferous trees, usually a cedar, for its nesting site, though occasionally nests are built in willows, or other trees. The nest is an oval dome, with the entrance near the top. It is built of moss, lichens, with scraps of grass and twigs inter-woven, the whole bound together with cobwebs, and has a very thick downy lining of soft feathers.

There are from six to eight pinkish white eggs, minutely speckled and streaked with shades of red.

Closely allied to this species is the *Red-headed Tit* (*Aegithaliscus con-cinnus*), which has the top of the head, sides of the breast, and abdomen rufous. It occurs as a resident in the hills, but is not common.

The only remaining Tit recorded from the Yangtse Valley is the *Brown-headed Tit* (*Remiza consobrina*), which has the forehead, and a line through the eyes deep brown, and the whole of the upper parts more or less washed brown.

It occurs as a rather rare winter visitant.

Family, Paradoxornithidae, the Crows.

The crows have short, thick, bills, with nostrils completely hidden by bristles. They are small birds, with the loose fluffy plumage of the Tits; rounded wings, with ten primaries; and a long graduated tail.

The sexes are alike in plumage, and the young are identical in coloring with the adults.

The relations of this Family have never been satisfactorily defined. They are not mentioned by Dr. Knowlton, and the characteristics as given are condensed from Lyddeker.

This is a small Family of twenty two species, confined to southeastern Asia. Twelve species are peculiar to China, and four reach the Yangtse Valley.

HEUDE'S CROWTIT.

PARADOXORNIS HEUDEI, DAVID.

Description.—Length seven inches. Bill yellow. Tarsus yellowish.

Crown gray. Conspicuous black eyebrows. Throat white. Neck gray. Cheeks and back rose gray, with a few long brown spots. Rump yellowish rufous. Breast dark red. Flanks reddish. Abdomen white.

Distribution.—Central China. Resident in the reed beds along the Yangtse River.

Nest and Eggs.—We do not find any account of its nesting habits.

Austin's Crowtit (Paradoxornis guttaticollis, David) has the upper parts yellowish brown, reddish on the head, and below yellowish white, with an irregular band of black spots on the breast. It is a west China species, occurring as a very rare resident in the Yangtse Valley.

WEBB'S CROWTIT.

SUTHORA WEBBIANA, GRAY.

Description.—Length five and one half inches. Bill dark brown, lighter on the edges. Tarsus brownish black.

Head and neck bright rufous, upper parts olive brown. Throat and breast rufous washed with rose, with a darker stripe on every feather. Flanks, abdomen, and under tail coverts olive. Lesser wing coverts olive green.

Distribution.—Common all over China. Resident in the Yangtse Valley.

Nest and Eggs.—The nest is built in reeds, nettles, or low shrubs. It is a loose structure of coarse grass, and leaves, bound together with cobwebs, and lined with fine grasses. The eggs are of various shades of blue, some quite pale. There are usually two broods in a season, and the whole family seem to remain together during the fall and winter in a small flock.

Notes.—These birds may be found in small flocks in tall grasses or reeds all over the country. They are possessed of a temper all out of proportion to their size. The Chinese train them for fighting. The birds are put in specially constructed cages, with one side sufficiently open to allow them to fight between the bars, but not to escape. Their thick, heavy bills enable them to give a strong effective blow, or to get a bone-breaking grip on the leg of their opponent.

This is considered the cage bird of the Chinese "sport," and large sums are often paid for a good fighter.

The *Rufous Crowtit* (*Suthora suffusa*), a south China species, also occurs in the Yangtse Valley. It is described as smaller, with a bright rufous abdomen. There seems to be some doubt, however, as to the validity

of the species, and it may prove to be only a subspecific form of Webb's Crowtit.

Family, Oriolidae, the Orioles.

Orioles have strong bills, about as long as the head, straight, or slightly curved at the tip, where the upper mandible is notched. The nostrils are bare. The tarsus is short, and the toes rather small, and free at the base, with long curved claws. The long pointed wings contain ten primaries, of which the third and fourth are the longest. The tail is moderately long and slightly rounded. The sexes are usually different in plumage, and the nestling is streaked.

Orioles are rather shy, strictly arboreal birds, subsisting chiefly on insects, which they take among the trees.

These Old World Orioles must be clearly distinguished from the American Orioles (Icteridae) which they resemble only in their coloration.

There are about fifty species in the Family, of which China has three, and the Yangtse Valley one.

THE BLACK-NAPED ORIOLE.

ORIOULUS DIFFUSUS, SHARPE.

Description.—Length nine and one half inches. Bill reddish yellow. Tarsus lead blue. Iris light brown.

Male.—Brilliant golden yellow, with a black stripe from the base of the bill to the nape. Wings and tail black, tipped yellow.

Female.—Has the back tinted green, and *young birds*, in addition are streaked with black on the under parts, and lack the eye streak.

Distribution.—China and India. A summer visitant in the Yangtse Valley, more common on the hills, but often seen in the larger trees on the plains.

Nest and Eggs.—The nest is built at a considerable height from the ground in tall trees or bamboos. It is a deep cup of leaves, roots, and grass, bound together with cobwebs or silk fibre, and usually slung in the fork of a branch. The form and construction varies considerably. The eggs are pink, spotted with dark red and gray.

Notes.—These birds are usually quite shy, and do most of their feeding in the early morning, keeping quiet during the middle of the day. Their call is a rather melodious whistled note.

Family, Corvidae, the Crows and the Magpies.

This Family have a stout, compressed, conical bill, which is never distinctly notched, or angulated at the base ; and usually rounded, operculate nostrils, hidden by frontal tufts of feathers. The legs and feet are very strong, and most of the Family walk well on the ground. The middle toe with its basal segment is united for about half its length to the lateral one. The wings are variable in shape, but all possess ten primaries, of which the outer one is short—only about half the length of the next. The tail is also variable, being round or graduated, but never emarginated or forked.

These are mostly large birds, the Ravens being the largest of the *Passeriformes*. They are active and energetic, possessing a high degree of intelligence.

This Family, are omniverous feeders, taking grain, fruits, insects, small animals, nestlings, eggs, and in some cases carrion for food.

There are over two hundred species in the Family, widely distributed over the world. Twenty seven species have been recorded from China, of which nine reach the Yangtse Valley.

Key to the *Corvidae* of the Yangtse Valley.

a. Plumage solid black ;

a'. Very heavy bill feathered at base :

Corvus macrorhynchus levaillanti.

b'. Sharp conical bill, bare of feathers at the base ; *Corvus frugilegus pastinator.*

b. Plumage mixed black and white ;

b'. Length over eighteen inches, white collar and gorget ; *Corvus torquatus.*

d'. Length under fifteen inches ;

a''. White collar, breast, and abdomen ; *Coleus dauricus.*

b''. Whole under parts dark mixed gray ; *Coleus neglectus.*

c. Plumage black, white, and purple ;

Pica pica sericea.

d. Plumage mostly blue or gray ;

e'. Tail medium length ;

c''. Head solid black ; *Cyanopica cyanus.*

d''. Head vinaceous gray, uniform with back ; *Garrulus sinensis.*

f'. Tail very long, head black, spotted gray ; *Urocissa sinensis.*

THE COLLARED CROW.

CORVUS TORQUATUS, LESS.

Description.—Length nineteen and one half inches. Bill, tarsus, and iris, black.

Whole plumage black, except a broad white collar around the neck, and extending down on the breast. Young birds have the neck gray.

Distribution.—All China. A common resident in the Yangtse Valley.

Nest and Eggs.—With the exception of the Magpie, this is the earliest breeder in the Yangtse Valley. Building begins in February, and the eggs are laid in March or April. The nest is placed high up in tall trees, either in the hills, or on the plains. Occasionally an old Magpie's nest is repaired and used. The nest is built of coarse sticks, with a lining of grass, twigs, or pine needles.

There are three or four eggs, of variable size, shape and color. They are usually light green, blotched and speckled with dark green, and dull grayish red. The eggs of this Crow may be distinguished from those of the following one by the absence of the bluish tinge in the ground color.

Notes.—This crow is solitary in its habits, never gathering in flocks as many of the Family do. The male and female may be seen feeding together, but very rarely more than these two.

THE BIG-BILLED CROW;

CORVUS MACRORHYNCHUS

LEVAILLANTI, LESS.

Description.—Length twenty one inches. Bill very heavy, arched, and black. Tarsus and iris black.

Plumage black with purplish reflections all over. It may be distinguished from the only other large black crow in the Yangtse Valley by the larger size, and by the heavier arched bill, fully feathered at the base,

Distribution.—All China. A common resident in the Yangtse Valley.

Nest and Eggs.—The nests are built singly, high up in tall trees, usually beginning in March, or April. It is built of twigs, lined with softer material, sometimes with hair.

There are five eggs in a clutch. They are light bluish green in color, marked with grayish red and green markings.

Notes.—This Crow is also solitary during the whole year, never gathering in large flocks. It is the most fearless of the Family, especially in the winter when food becomes scarce. At that time it frequently comes around houses, and will seize any tasty morsel left exposed around a back porch or window.

THE EASTERN ROOK.

CORVUS FRUGILEGUS PASTINATOR,
GOULD.

Description.—Length nineteen inches. Bill straight, pointed, black. Tarsus and iris black.

Whole plumage iridescent black. Adult birds have no rictal bristles, but the base of the bill is bare of feathers, and covered with a white, scurfy skin. Its narrower bill, and the bare area at its base are easy marks of identification.

Distribution.—All China. A very common and abundant resident in the Yangtse Valley.

Nest and Eggs.—Rooks nest in colonies in large trees, or groups of trees, frequently in the center of large cities, as for instance, on the Bund in Shanghai, Chinkiang, or in the old

yamens in Soochow. The nests are large and bulky, similar to those of other Crows.

There are four or five eggs in a clutch, usually greenish blue, marked with shades of brown, though both ground color, and markings vary considerably in shade and density.

Notes.—The Rook is decidedly gregarious, remaining in flocks during the whole year. In winter their numbers are largely augmented by visitors from the north. Enormous flocks gather to feed in the fields by day, and noisily meet to share some common roosting place at night.

The Chinese give them the name of "Wind Crow," from their habit of soaring in a high wind.

THE PIED JACKDAW.

COLEUS DAURICUS, (PALLAS).

Description.—Length fourteen inches. Bill and tarsus black.

The breast and abdomen are white. The rest of the plumage is iridescent black.

In *young birds* the white is replaced by gray. These birds gather with the Rooks in large flocks in the winter, but may be readily distinguished by their smaller size.

Distribution.—Eastern Siberia, Mongolia, Northern and Central China. An abundant winter visitant in the Yangtse Valley, arriving in October and leaving in April.

THE BLACK JACKDAW.

COLEUS NEGLECTUS (SCHLEGEL).

Description.—Length thirteen inches. Bill and tarsus black.

The plumage is black above, with a dark gray patch on the back of the head. The whole underparts are a dark gray, almost black, very much darker gray than the young of the Pied Jackdaw.

Distribution.—Eastern Siberia, north and central China. A winter visitant in the Yangtse Valley, but not so common as the Pied Jackdaw.

Notes.—Both of these Jackdaws are easily distinguished from the Crows by their smaller size. The Pied Jackdaw wears not only the white collar of the Collared Crow, but also a white vest, which comes down well over his whole under parts, but he does not keep his white as spotlessly clean as does the Crow.

Jackdaws do not seem to nest in southern Kiangsu, but come in the autumn with the immigrant Rooks, and throughout the winter mingle freely with them, in the fields by day, and on the roosts by night. The Chinese cover both species of Jackdaws by the same name, "Little Crows", or "Wheat Crows", the latter from their fondness for scratching up the seedling wheat in the fields.

THE PIED MAGPIE.

PICA PICA SERICEA, GOULD.

Description.—Length eighteen inches. Bill and tarsus black.

Plumage mostly black. The scapulars, abdomen, and rump are white, and there are fine white streaks on the feathers of the throat. The wings and tail show a rich purplish iridescence. The tail is graduated.

Distribution.—Cosmopolitan. A very common resident in the Yangtse Valley.

Nest and Eggs.—The nests are bulky structures of sticks and mud, lined with roots. They are to be seen almost everywhere in large trees. They are usually roughly oval, with the entrance at one side near the top. This entrance is frequently surrounded with thorns, as a protection against inquisitive marauders. Sometimes new nests are built on top of the old ones, until they appear to have three or four stories.

There are six pale bluish green eggs, very thickly spotted and speckled with olive brown, and faintly blotched with gray.

Notes.—Magpies are said to pair for life. Their presence is considered as a good omen by the Chinese. To have one call upon your approach is sure to bring happiness.

THE AZURE-WINGED MAGPIE.

CYANOPICA CYANUS SWINHOEI,
HARTERT.

Description.—Length fifteen inches. Bill, tarsus, and iris, black.

Most of the head black. Rest of the body bluish gray, darker above than below. Wings and tail azure blue. The terminal half of the external webs of the tail quills are bordered white, and the central feathers are tipped white.

Distribution. — Spain, Morocco, eastern Siberia, and Japan. The curious fact that this bird is found in Spain, and is next met with in China, not being found in the intervening countries,

is usually accounted for on the hypothesis that it was introduced from China into Spain by early travellers between the two countries.

Nest and Eggs.—This Magpie breeds in colonies in high trees around the villages in the plains. The nest is placed high up on the fork of a small branch. It is built upon a foundation of coarse sticks, but the real nest is constructed largely of moss, with often a good deal of mud in the base. It is lined with moss, hair, or fibers of various kinds. We have observed these birds stripping the fibers from a cedar tree to be used in lining the nest.

The eggs are greenish gray or olive brown, spotted and streaked with shades of brown, and purplish gray. There is considerable variation, both in the ground color and the markings of the eggs.

THE CHINESE BLUE MAGPIE.

UROCISSA SINENSIS (LINN.)

Description.—Length twenty-five inches. Bill and tarsus coral red.

Forehead, sides of the neck, and breast, intense black. The feathers of the crown are tipped lilac, and the nape is violet gray. Back violet gray. Abdomen gray, washed with violet. Outer webs of wing feathers washed with blue, the edges and ends are white, and the inner webs black. The tail is long, blue, and graduated. The two central feathers, very much the longest, curved down at the tips, are a rich blue color, tipped with white.

Immature birds are gray on the whole head, throat, and upper back, darker on the sides of the head.

Distribution.—South and central China. Resident in the Yangtse Valley, but much more common in the hills.

Nest and Eggs.—The nest is a rather frail structure of twigs, roots, and tendrils.

The eggs are pale greenish yellow, spotted and streaked with dull reddish brown and gray, usually more heavily marked on the larger end.

Notes.—This bird is quite common in the bamboo forests around Mokansan, where its peculiar, creaking note can be heard almost any summer day. They are usually found in small flocks.

THE CHINESE JAY.

GARRULUS SINENSIS (SWINHOE).

Description.—Length thirteen inches.

The whole body is a uniform vinaceous gray, shading to white on the upper and under tail coverts, excepting a broad black malar stripe. There is a large spot on the wing barred black, white, and blue. The secondaries and tertials are black, and the primaries are black at the base, and fuscous toward the outer end, with some white on the outer webs. The tail is brownish black.

Distribution.—South and central China. Resident in the hills of the Yangtse Valley, but not at all common. It has been taken on Mokansan.

Nest and Eggs.—The nest is a cup built of moss with a lining of fine roots. It is usually placed in a low tree.

The eggs are various shades of brownish green, closely speckled with light brown, with dark brown hair lines toward the ends.

Family, Sturnidae, The Starlings.

True Starlings are birds of medium size, with strong tarsi, and feet; usually a rather long, pointed bill; and the rictus entirely without bristles of any kind. The wings are moderately long, with ten primaries, the first one often being very small. The tail is variable in shape. Both sexes are alike in plumage, or nearly so, and the nestling is typically streaked below.

A few forms are migratory, but the majority are resident, and largely gregarious, assembling in large flocks. They frequent trees to some extent, but are largely terrestrial, walking easily on the ground, and feeding mainly on grain, seeds, berries, and insects.

This Family is distributed throughout the Old World and Oceania. China has eight species, one half of which reach the Yangtse Valley.

THE CRESTED MYNAH.

ÆTHIOPSAR CRISTATELLUS (L.)

Description.—Length eleven inches. Bill and tarsus yellow. Iris red.

The nasal feathers are turned forward forming a crest springing from the base of the bill. The whole plumage is black with metallic reflections, except for a white bar across the wings above and below, and the white tips to the lower tail coverts, and outer tail quills.

This bird looks almost solid black when perched, but the white shows plainly in flight.

Distribution.—South and central China. A very common resident in the Yangtse Valley.

Nest and Eggs.—The Mynah breeds in holes in trees and old wall, as well as under the eaves of houses. Our local birds show decided preference for the ruins of old pagodas, as their nesting sights, and large numbers seem to nest in one ruin, frequently with the Black-eared Kites, and even sometimes with some of the Falcons.

The nest is a regular rubbish heap of straw, leaves, feathers, snake sloughs, dry grass, and similar materials. The eggs are a pale greenish blue.

Notes.—This well known bird is very sociable in its habits, and can usually be seen feeding in small flocks throughout the winter. The Chinese value it as a cage bird. It can be taught to speak certain words.

THE GRAY STARLING.

SPODIOPSAR CINERACEUS (TEMM.)

Description.—Length nine inches. Bill black at the tip, orange at the base. Tarsus orange.

Head and neck with greenish iridescence; forehead and auriculars heavily streaked with white. Back brownish gray, breast darker gray, abdomen lighter gray, shading to white on the lower tail coverts, and the under sides of the tail feathers. Rump white. Tail and wings above brownish gray, with the outer edges of the principal feathers white.

Females are much like the males, though there seems to be less iridescence in the black parts. However,

there is much variation in the amount of black in the winter plumage of both sexes.

Young birds have duller, more neutral colors, most of the whites of the adults being gray in the young.

Distribution. China and Japan. A winter visitant in the Yangtso Valley. It is usually found in flocks of from ten to several hundred individuals. They are active and restless, fly very rapidly, the whole flock wheeling and turning with almost military precision.

A much rarer bird is the *Silky Starling* (*Spodiopsar sericeus*), which is resident in south China. The male is a light silky gray above, with a white head, and black wings and tail. The female has the same silky sheen, but the gray is brownish. It occurs as a rare winter visitant in the Yangtso Valley.

The *Daurian Starlet* (*Agropsar sturnia*), occasionally occurs in the winter. It is brownish above, whitish below, with some rufous on the scapulars, wing coverts, and upper tail coverts.

Family, Zosteropidae. The Silver Eyes.

The Silver Eyes are so called from the ring of small white feathers which surrounds the eyes. They are small birds, with slender, slightly curved, or straight, pointed bills, about one half the length of their heads. The nostrils are covered by a large membrane. The tongue is protractile and bifid. The tarsus is of moderate length, covered with a few scales in front. The middle and outer toes are partly united. The wings are rather short, with the first

primary extremely small. The tail is short, and square. The sexes are alike in plumage. Their principle food is insects, though occasionally they will suck the juices of fruits,

The Family comprises about one hundred and seventy species, only two of which reach the Yangtse Valley.

THE SILVER EYE.

ZOSTEROPS SIMPLEX, SWINHOE.

Description. Length four and one half inches.

Green above, neck and under tail coverts yellow. A very distinct white circle around the eye. Breast and flanks gray. Abdomen white. Wings and tail washed with green.

Distribution. China generally. A resident in the Yangtse Valley.

Nest and Eggs.—The nests vary considerably in both size and construction. Some are little more than a frail network of fine dry grass, bound together, and fastened with cobwebs. Others are quite substantial cups of moss, grass, and roots. They are either swung in the fork of a twig, or attached to the side of a small limb. There are three or four pale greenish blue eggs in a clutch.

Notes.—This is considered the most genteel of all the Chinese cage birds, and one may usually note the neat clothes and polite manners of the gentlemen who keep them. Their song is simple but rather soft and sweet.

In the wild they fly in small flocks about the groves, and are sometimes seen holding themselves suspended from the corolla of a large flower.

Another species, the *Brown-flanked Silver Eye* (*Zosterops erythroleurus*) passes in migration. It has the sides of the abdomen reddish brown.

Family, Certhiidae. The Creepers.

The Creepers are small mainly insectivorous birds, and with the exception of the one species found in the Yangtse Valley have very plain plumage.

They resemble the Nuthatches in their habits, but differ from them in having the slender bill pointed and curved downward. Their feet are like the Nuthatches, and their claws equally as long, to adapt them for the same kind of climbing, but the tail feathers in the true Creepers are stiff, and are used as a prop in climbing like the Woodpeckers. The sexes are usually alike.

The Family includes about fifty species, mainly of Old World distribution, of which China has three, and the Yangtse Valley one.

The *Red-winged Creeper* (*Tichodroma muraria*) is a very rare bird, plainly attired in brownish gray and black, but marked with bright red wing coverts. It occurs as a resident in parts of Kiangsi Province.

Family, Ploceidae. The Weaver Birds.

This family have small, stocky bodies, and the conical, thick bills characteristic of the Sparrows or Finches. In fact about the only visible difference between them is the possession of ten instead of nine primaries, and even then, in many species, the first primary is so minute as to be observed with difficulty.

The Family is confined to the Old World, where it is most abundant in Africa. The branch of the Family found in China is characterized by a powerful swollen bill, a tail in which the central feathers are more or less pointed; and there is no spring change in the plumage.

Only three species of this family are met with in the Yangtse Valley.

THE SHARP-TAILED MUNIA.

UROLONCHA SQUAMICOLLIS, SHARPE.

[*Munia acuticauda* (Hodge.)]

Description.—Length four and one half inches. Bill dark plumbeous blue, shading lighter at the base and at the tip of the lower mandible. Tarsus brownish black.

Upper parts a nutmeg brown, with a fine white shaft line to each feather. Rump white mixed with gray. Upper and under tail coverts brownish. Throat black. Sides of the neck and breast brownish white, each feather with the white shaft line, and all edged white. Abdomen grayish white, marked with faint brown streaks. The tail is black, and pointed. The wings are brown.

Distribution.—South and central China, and southeastern Asia. Common resident in the Yangtse Valley.

Nest and Eggs.—The nest is a large globular structure of grass and leaves, mixed with paper, rags, or any convenient material. The entrance is at one side. It is usually placed in a shrub, or low tree, or vine. Sometimes a number of birds will join in the construction of a communal nest. The eggs are light pink color.

Notes.—These little birds are usually seen in groups of from five to a dozen, which feed and roost together, sometimes occupying an old nest as their roosting place. The Chinese call them “The Ten Sisters.”

Another species of *Chinese Munia* (*Munia punctulata topela*) sometimes occurs as a summer resident in the upper part of the Yangtse Valley. It is very similar to The Sharp-tailed Munia, but is lighter in color with a tinge of greenish yellow on the rump and tail.

THE JAVA SPARROW.

PADDA ORYZIVORA (LINN).

Description.—Length five and one half inches. Bill bright red.

Head and neck black, with the exception of the cheeks and ear coverts which are conspicuously white. Back and breast gray. Flanks washed with rose. Abdomen white. Wings brown. Rump, upper tail coverts, and tail black.

Distribution.—East Indies and south China. Passes down the coast section of the Yangtse Valley on migration, in small numbers. Frequently seen in Shanghai and Soochow markets for sale as a cage bird.

Family, Fringillidae, Sparrows, Buntings, etc.

This very large Family is nearly world-wide in distribution, being most numerous in the Northern Hemisphere. The limits of the Family are not yet clearly defined, but the main characteristics are as follows:—

A strong, hard, cone-shaped bill, adapted for shelling and eating seeds ;

wings containing nine primaries only ; a tail of twelve feathers, quite variable in shape. The nostrils are pierced close to the line of the forehead, very near the upper mandible, and are concealed by feathers, or a membrane, while the rectal bristles are distinct. The sexes are usually dissimilar in plumage, and that of the nestling is quite variable. They are for the most part gregarious and arboreal, though many of them feed freely on the ground.

One large, Old World genus of this Family, the Buntings (*Emberiza*), is sometimes given Family, or sub-family rank. It is distinguished principally by the fact that the two mandibles are not in contact throughout their length, but form an angle about midway. There is also a hard, bony knob on the palate.

This family numbers over 560 species, of which China has about 60, and the Yangtse Valley 25.

THE BLACK-HEADED HAWFINCH.

EOPHONA MELANURA (GM).

Description.—Length six and one half inches. Bill very large, heavy, conical in shape ; yellow, with both mandibles edged and tipped green. Tarsus white.

Male.—Entire head glossy black, Neck, breast, and rump ashy gray. Back gray brown. Abdomen, upper and under tail coverts white. Flanks gray with some rufous. Wings and tail metallic black, the wing feathers tipped with white forming bars. The tail is forked.

Female.—Resembles the male, except that her head is gray brown, uniform with the back, and the black of the wings and tail is duller.

Distribution.—China generally. Resident in the Yangtse Valley, but much more common in winter.

Nest and Eggs.—The nest is usually placed on the horizontal limb of a large tree. It is a well built cup of leaves and grass, cemented together with mud, with an outer covering of twigs and roots, and an inner lining of fine roots and leaves. There are from four to six light olive green eggs, marked with dark brown and gray.

Notes.—Many small flocks of these birds come south in October and remain until April. They feed on the ground, cracking seeds with their heavy bills. When alarmed the whole flock springs away together on whirring wings.

The *Masked Hawfinch* (*Eophona personata magnirostris*) is larger than the Black-headed Hawfinch, and has only the top of the head, the forehead, and chin black, otherwise it is very similarly marked. It occurs as a migrant in the Yangtse Valley. This bird is often kept by the Chinese as a pet, and is readily taught simple tricks.

Another quite similar bird, also a migrant in the Yangtse Valley, is the *Japanese* form of the *Common Hawfinch* (*Coccothraustes coccothraustes japonicus*). It has a larger, heavier bill than the other two Hawfinches, the face is black as in the Masked Hawfinch, but the tail is brown, and not black, as in both the other two.

THE ORIENTAL BULLFINCH.

PYRRHULA GRISEIVENTRIS, LAFR.

Description.—Length six inches. Bill small, black, and very convex.

Male.—Crown, nape, and chin black. Cheeks and ear coverts pink, Upper parts blue gray. Rump white. Tail and wings black. The greater wing coverts are broadly tipped with gray. Under parts gray washed with pink. The amount of this pink washing varies quite considerably.

Female.—She has the upper half of the back gray, the lower half brown. There is very little pink on the face, and none on the lower surface of the body, which is a dark lavender gray.

Distribution.—Eastern Siberia, north China, and Japan. A winter visitant in the Yangtse Valley.

The male of the *Crimson Finch* (*Carpodacus erythrinus*), another rare migrant in the Yangtse Valley, is readily recognised by its dull crimson crown, nape, throat, and breast, and the crimson washing of the brown upper, and the yellowish brown lower parts. The female is streaked brown above and below, with very little or none of the crimson of the male.

THE TREE SPARROW.

PASSER MONTANUS (LINN.)

Description.—Length five and one half inches. Bill black. Tarsus light brown. Iris brown.

Crown of the head and nape uniform chocolate brown, cheeks and ear coverts white, the latter with a large black patch. Throat and fore-neck black. Back reddish tawny, with

broad black streaks. Two white wing bars. Lower parts ashy white. Sexes are alike.

Distribution. — China generally. Common resident in the Yangtse Valley, where it takes the place of the "English Sparrow" (*Passer domesticus*) of the United States or the House Sparrow of England and Europe. In Europe, the Tree Sparrow is a mountain bird, but in the Orient it lives also in the plains, seeming to show a special preference for houses built in western style.

Nest and Eggs.—The nest is simply a mass of grass and rubbish suited in shape and size to the cavity it occupies. They are too common about our houses to need description. The number, color, and markings of the eggs vary considerably, even in the same clutch. Generally they are white, or greenish white, with spots and blotches of browns, purples, and greens, of various shades. Several broods are raised in a season.

THE RUDDY SPARROW.

PASSER RUTILANS (TEMM.)

Description.—Length five inches. Bill black in summer, brown in winter. Tarsus reddish gray. Iris chestnut brown.

Crown of head uniform chestnut. Upper parts deep chestnut with a few black spots. Cheeks, crown, and sides of neck white. Throat black. Under parts pale ashy brown, whiter on the abdomen. Wing coverts are chestnut, black and white. Tail blackish brown, edged with ashy brown.

Distribution.—South and central China, and Japan. Common resident on the higher hills of the Yangtse Valley.

Nest and Eggs.—The nests are usually built in hollow trees, or sometimes in houses. The nests are similar to those of the House Sparrow, as are also the eggs.

Notes.—These Sparrows frequent the wooded localities, where they sing their sweet, simple song from the tops of the highest trees.

THE BRAMBLING.

FRINGILLA MONTIFRINGILLA, LINN.

Description.—Length six and one quarter inches. Bill yellow with a blackish tip. Tarsus reddish brown. Iris hazel.

Head, cheeks, nape, and upper part of the back black, the feathers tipped with yellowish brown. Rump and lower parts white. Flanks reddish with a few dark spots. Wings black, the primaries edged pale yellow, and the inner ones yellowish at the base. Tail feathers black, with the outer pair broadly white for more than half the web.

The *Female* is like the male, except that her colors are slightly duller.

Distribution. — Europe, northern Asia, China, and Japan. A winter visitant in the Yangtse Valley.

Notes.—This bird usually feeds in wooded areas, but is not unfrequently met with feeding in stubble fields with other birds. It is frequently found with the Buntings in the mulberry groves where weeds have been allowed to go to seed.

THE CHINESE GREEN FINCH.

CHLORIS SINICA (LINN.)

Description.—Length five and one half inches.

Male.—Crown of the head ashy gray tinged with olive. Back olive brown washed with green. Throat and rump yellowish green. Breast, sides, and flanks, chocolate brown washed ashy. Abdomen brighter yellow, whitish toward the vent. Under tail coverts yellow. Wings and tail yellowish at the base and black toward the ends.

Female.—Duller in color. Plumage dark brown, under parts tinged with yellow.

Distribution. — Eastern Siberia, China, and Japan. A resident in the Yangtse Valley.

Nest and Eggs.—The nests are well made of grass, feathers, and any similar material. They are usually placed in the thick foliage of small pine trees. The eggs are of two types; one a pale green, speckled with black and red; the other white, speckled with pale reddish or yellowish brown.

Notes.—This bird has a very sweet simple song, and is sometimes kept as a cage bird by the Chinese.

THE SISKIN.

SPINUS SPINUS (LINN.)

Description.—Length four and one half inches.

Bill light gray above, dull white below, dusky at the tip; it is long and pointed, slightly curved downward. Tarsus pale brown. Iris dusky brown.

Male.—Crown, and center of throat black. Broad yellow streak behind the eyes. Upper parts yellowish green, rump brighter yellow. Under parts greenish yellow, the abdomen whitish, streaked with brown, as are also the flanks. Greater wing coverts black, broadly tipped with yellow.

Female.—Lacks the black crown. Yellowish above, streaked with dark brown. Rump yellow. Under parts yellowish white streaked with black. *Young birds* resemble the female.

Distribution.—Europe and Asia. Found all over China, wintering sometimes even in the north. A winter visitant in the Yangtse Valley.

Notes.—This bird is also kept as a cage bird by the Chinese. It is usually caught with bird-lime.

THE LAPLAND BUNTING.

CALCARIUS LAPPONICUS (LINN.)

Description.—Length six inches. Bill dull yellow, dusky at the tip. Tarsus dusky. Iris dark brown.

Male.—In summer, the plumage is prevailing black, streaked rufous or white, with the exception of the white abdomen and a rufous patch on the back of the neck.

In winter, the upper parts are blacker, the back of the neck more rufous, and the breast more heavily marked with black.

In the *female*, rufous brown largely takes the place of the black in the male, otherwise she is very similar.

Distribution—Circumpolar. They occur in flocks on the plains of north China, and pass the Yangtse Valley in migration.

THE GRAY-HEADED BUNTING.

EMBERIZA SPODOCEPHALA, PALL.

Description.—Length four and three quarter inches. Bill brown, whitish on the lower mandible, and black at tip. Tarsus flesh color. Iris brown.

Male.—Head, neck, and upper breast olive gray. Under parts pale yellow, streaked brown on the flanks. Back, and wing coverts reddish brown, streaked with black. The uniform gray color of the heads of the males offers an easy mark of identification.

Female has the gray of the head streaked with dark brown. The throat is pale yellow. The breast gray, more or less streaked with brown. The abdomen pale yellow or whitish.

Distribution.—Siberia and China generally. A winter visitant in the Yangtse Valley.

Notes.—Dr. Bergen says "One sees these Buntings flitting about in the thick undergrowth in Fokien. They are common and at the same time very wary, flashing in and out of cover, so that generally only an instant's view is secured." In the Yangtse Valley, however, they very commonly spend the winter in our yards and gardens, where they lose much of their shyness, and will come right to the doorstep for food.

The *Green-headed Bunting* (*Emberiza spodocephala melanops*) has been differentiated as a separate species, but is regarded by most authorities as only a color variation of the Gray-headed Bunting, and if separated at all should only be given sub-specific rank. The gray of the head was supposed to be of a more decidedly green shade.

THE PAINTED BUNTING.

EMBERIZA FUCATA, PALLAS.

Description.—Length five and three quarter inches. Bill brown, lighter at

base of lower mandible. Tarsus flesh colored. Iris brown.

Crown gray streaked with black. Back reddish gray, with long black spots. Scapulars and rump uniform rufous. Throat white bordered with two blackish stripes. A white spot on each side of the neck, sometimes united on the breast. This is followed by a more or less broken band of rufous. Lower breast and abdomen creamy white. Wings and tail feathers black, edged rufous buff, except the outer tail feathers which are mostly white.

Distribution.—Siberia, China, Japan, and India. Resident in the Yangtse Valley.

Nest and Eggs.—The nest is placed in a clump of grass on the slopes of the hills. It is a fragile cup of grass and roots, lined with finer material and some hair. There are four or five grayish white eggs, spotted and streaked with brown and gray.

THE RUSTIC BUNTING.

EMBERIZA RUSTICA, PALLAS.

Description.—Length five and one half inches. Bill brown on the upper mandible, greenish yellow below. Tarsus yellowish brown. Iris brown.

Crown black streaked with light brown. Cheeks and ear coverts nearly black. Large yellowish white eyebrow. Under parts white, with the exception of a broad pectoral band of chestnut. Flanks and sides of the body have some chestnut markings. Upper parts chestnut, the feathers of the back broadly edged lighter. Rump nearly uniform chestnut. Lesser

wing coverts chestnut, median and greater coverts black, with the outside webs chestnut and tipped whitish.

Female.—Similar in color, but duller.

Distribution.—Northern Europe, and Asia to north China. A winter visitant in the Yangtse Valley.

Notes.—These birds usually frequent the neighborhood of watery places, living in the trees of the vicinity.

THE LITTLE BUNTING.

EMBERIZA PUSILLA, PALL.

Description.—Length about five inches. Bill brown, lower mandible whitish. Tarsus reddish gray. Iris brown.

Crown has a wide median red-brown stripe, bordered on either side by a stripe of black. This is followed by a pale eyebrow. Auriculars rufous, throat paler rufous. A black moustache. Breast and abdomen white with many long brown spots. Upper parts olive brown, the feathers with black centers. The plumage varies in shades in different individuals.

The *female* is very similar, but not so richly colored, and has less distinct brown spots below.

Distribution.—Asia, occasionally met with in Europe. Winter visitant in the Yangtse Valley, but not very common anywhere in China.

TRISTAM'S BUNTING.

EMBERIZA TRISTAMI, SWINHÖE.

Description.—Length five and one half inches. Bill brown, lighter at the base of the lower mandible. Tarsus reddish gray. Iris brown.

Head black, with a white median stripe, a white eyebrow, and a white streak on the cheeks. Back olive brown and black. Rump rufous. Throat black. Breast grayish white, tinged rufous. Abdomen whitish, with light brown streaks. Flanks yellowish.

Females quite similar, but the colors are less distinct.

Distribution.—China. A migrant in the the Yangtse Valley, rarely occurring in large numbers in any one place.

THE CHESTNUT BUNTING.

EMBERIZA CIOIDES, TEMM.

Description.—Length five and one half inches. Bill bluish black, paler on lower mandible. Tarsus light yellow. Iris hazel.

Crown and nape chestnut. A white eyebrow, and a black moustache. Auriculars dark rufous. Chin and throat grayish white, with a tiny black spot on the chin. Sides of neck ashy gray. A dark rufous band on the breast. Abdomen and under tail coverts whitish. Back rufous brown mixed gray. Rump and scapulars rufous.

Female similar, but duller.

Distribution.—China, Mongolia, and eastern Siberia. Resident in the Yangtse Valley.

Nest and Eggs.—The nest is usually placed in a small pine. It is built of grasses, roots, hair and similar materials. There are from three to five grayish white eggs, variously marked with brown and violet gray. There are two broods in a season.

The *Little Chestnut Bunting*, (*Emberiza castanieiceps*), has been described as a separate species. It is slightly smaller, lacks the tiny black spot on the throat, and has less white in the tail, but probably should be regarded only as a variety, or subspecies of the Chestnut Bunting.

THE YELLOW-THROATED BUNTING.

EMBERIZA ELEGANS, TEMM.

Description.—Length five and one half inches. Bill black in summer, and brown in winter. Tarsus flesh color. Iris brown.

Male.—Throat bright yellow. A large black spot on the upper breast. A conspicuous yellow eyebrow. Cheeks and ear coverts black. Crown black, with sandy edging to the feathers. There are some signs of yellow on the nape. The upper parts are rufous brown, streaked with black on the upper back and mantle. Under parts white, streaked with chestnut on the sides.

Female has the sides of the head mixed gray and rufous, the throat pale yellow, and the upper breast has a few black spots.

Distribution.—Siberia, China, and Japan. A winter visitant in the Yangtse Valley.

Notes.—This Bunting is "found on the borders of the forests and is said to be the best songster among the Buntings. Its song is peculiarly rich and melodious."

THE YELLOW-BROWED BUNTING.

EMBERIZA CHRYSOPHRYS, PALL.

Description.—Length six inches.

Crown black, feathers edged light brown, with a conspicuous white median stripe. A bright yellow eyebrow. Ear coverts brown or black, with a white spot just behind. Throat white, or yellowish white, with more or less black streaks. Back reddish brown, most of the feathers with black centers.

Female similar, but paler.

The yellow eyebrow with the white crown streak, and the reddish brown rump serve to identify this Bunting.

Distribution.—Siberia and China. A migrant in the Yangtse Valley.

THE YELLOW-BREASTED BUNTING.

EMBERIZA AUREOLA, PALL.

Description.—Length six inches. Bill, upper mandible dark brown, lower lighter. Tarsus pinkish brown. Iris brown.

Front of the head black. Vertex, neck, scapulars, and rump chestnut washed gray. Back striped with gray and black. Throat black. Under parts bright yellow, with a chestnut pectoral band, and a few long brown spots on the flanks. Wings brown, with lighter margins to feathers, and a pronounced white wing bar.

Females very similar, but the colors are duller, and the pectoral band is replaced by a few indistinct blackish spots.

Distribution.—Europe and Asia. Passes the Yangtse Valley abundantly in migration, both spring and fall.

Notes.—These birds are fond of perching on the top of reeds or bushes, and singing continuously their short, but rather sweet, song. In the early fall when they first arrive, they are seen in all stages of moult, some without tail feathers, look when on the wing like small quails. They are netted by the Chinese in large numbers and kept as cage birds.

THE RUDDY BUNTING.

EMBERIZA RUTILA PALL.

Description.—Length five inches. Bill brown. Tarsus gray. Iris reddish brown.

Upper parts, throat and breast cinnamon rufous. Rest of the under parts yellow, the flanks marked with long brown spots. Rump rufous. Mantle streaked.

Females similar, but less bright, and the colors mixed with brown.

Distribution.—Eastern Siberia and China. Passes the Yangtse Valley on migration.

THE JAPANESE BUNTING.

EMBERIZA YESSOENSIS, SEEBOHM.

Description.—Length five and one half inches. Bill dark horn. Tarsus reddish brown. Iris brown.

Male.—Crown, sides of face, and throat black. Upper parts reddish brown, the nape, upper back, and rump being almost uniform in color. Mantle black, feathers edged pale rufous. Under parts yellowish white.

In winter plumage there is a broad

yellowish eyebrow, and the head is rufous brown, yellowish on the ear coverts and throat.

Males in November show intermediate plumage.

The *Female* is similar to the male in winter plumage, and has some black spots on the foreneck.

Distribution.—Japan and China. Winter visitant in the Yangtse Valley.

THE REED BUNTING.

EMBERIZA PALLASI (CABINIS).

Description.—Length five and three tenths inches. Bill dark brown, edges of lower mandible lighter. Tarsus pinkish brown. Iris brown.

Male.—In summer he has a black head and a large black patch on the throat and upper breast. The wings are black with more or less distinctly white edges. The nape, rump, and under parts are white.

In winter the black is not so marked, and the white nape is obscured by the feathers being tipped with yellowish brown.

The *female* lacks the black head and throat, though there is a tawny black band on each side of the throat. The nape is gray.

Distribution.—Europe and Asia. Winter visitant in the Yangtse Valley.

Notes.—These little Buntings are commonly found in the dry reeds of the marshes in the winter, usually singly or several in the same neighborhood. They are not very shy, and make quite short flights, when disturbed, rarely leaving the patch of reeds, however small it may be. When alarmed, however, they are quite adept at hiding, and are very difficult to flush.

INDEX.

	PAGE
<i>Acanthopneuste borealis</i>	167
„ <i>coronata</i>	167
„ <i>tenellipes</i>	168
<i>Accipiter gularis</i>	51
„ <i>nisus</i>	50
„ <i>virgatus</i>	51
<i>Accipitrinae</i>	5, 50
<i>Acrocephalus agricola</i>	162
„ <i>bistrigiceps</i>	162
„ <i>orientalis</i>	161
<i>Actitis hypoleucos</i>	71
<i>Adjutant, Smaller</i>	23
<i>Aegialitis alexandrina</i>	77
„ <i>dubia</i>	77
„ <i>placida</i>	77
<i>Aegithaliscus concinnus</i>	187
<i>Aegithalos glaucogularis</i>	186
<i>Aesalon regulus</i>	41
<i>Aethiopsar cristatellus</i>	200
<i>Agropsar sturninus</i>	202
<i>Aix galericulata</i>	34
<i>Alauda arvensis</i>	115
<i>Alaudidae</i>	6, 115
<i>Alcedinidae</i>	6, 96
<i>Alcedo bengalensis</i>	96
„ <i>ispida</i>	96
<i>Alseonax latirostris</i>	141
<i>Amaurornis coccineipes</i>	66
„ <i>phoenicurus</i>	62
<i>Ampelidae</i>	6, 177
<i>Ampelis garrulus</i>	177
„ <i>japonicus</i>	178
<i>Anas boschas</i>	29
„ <i>platyrhynchus</i>	29
„ <i>zonorhynchus</i>	30
<i>Anatidae</i>	5, 24
<i>Anatinae</i>	5, 29
<i>Anorthura fumigata</i>	158

	PAGE
Anser albifrons	25
,, cinereus	26
,, cygnoides	29
,, erythropus	26
,, fabalis... ..	26
,, segetum	26
,, serrirostris... ..	26
Anseriformes... ..	5, 24
Anserinae	5, 25
Anthus blakistoni	120
,, cervinus	119
,, hodgsoni	121
,, japonicus... ..	120
,, maculatus	121
,, richardi	118
Apus pacificus	108
Aquila heliaca	47
,, maculata	47
Aquilinae	5, 46
Archibuteo hemiptilopus	50
Ardea cinerea	16
Ardeidae	5, 15
Ardeola bacchus	17
Arenaria interpres	78
Asio brachyotus	104
,, flammeus	104
,, otus	104
,, vulgaris... ..	104
Astur cuculoides	51
,, soloensis	51
Avocet	76
<i>Babbler, Lesser Scimitar</i>	133
,, <i>Red-headed</i>	135
Bambusicola thoracica	55
Bee-eater	6, 100
<i>Birds, Crane-like</i>	5, 59
,, <i>Cuckoo-like</i>	6, 90
,, <i>Diving</i>	4
,, <i>Falcon-like</i>	5, 38
,, <i>Fowl-like</i>	5, 51
,, <i>Goose-like</i>	5, 24
,, <i>Perching</i>	114
,, <i>Plover-like</i>	6, 68
,, <i>Roller-like</i>	6, 94
,, <i>Sparrow-like</i>	6
,, <i>Stork-like</i>	5, 12
,, <i>Weaver</i>	7, 204
<i>Bittern, Great</i>	21
<i>Blackbird, Chinese</i>	146
<i>Blue Throat</i>	156
Botaurus stellaris... ..	21
<i>Brambling</i>	211
Bubo bubo	103
,, coromandus	106

	PAGE
<i>Bubo ignavus</i>	103
<i>Buboninae</i>	103
<i>Bubuleus coromandus</i>	22
<i>Buchanga atra</i>	175
„ <i>leucogenys</i>	177
<i>Budytes borealis</i>	127
„ <i>citreola</i>	128
„ <i>flavus simillimus</i>	128
„ <i>taivanus</i>	128
<i>Bulbuls</i>	6, 135
„ <i>Black-headed</i>	136
„ <i>Blue</i>	138
„ <i>Chinese</i>	136
„ <i>Finch-billed</i>	138
„ <i>White-headed Black</i>	137
„ <i>Yellow-vented</i>	137
<i>Bullfinch, Oriental</i>	209
<i>Buntings</i>	206
„ <i>Chestnut</i>	217
„ <i>Gray-headed</i>	213
„ <i>Green-headed</i>	214
„ <i>Japanese</i>	220
„ <i>Lapland</i>	213
„ <i>Little</i>	216
„ <i>Little Chestnut</i>	218
„ <i>Painted</i>	214
„ <i>Reed</i>	221
„ <i>Ruddy</i>	220
„ <i>Rustic</i>	215
„ <i>Tristram's</i>	216
„ <i>Yellow-breasted</i>	219
„ <i>Yellow-browed</i>	219
„ <i>Yellow-throated</i>	218
<i>Bustards</i>	5, 67
„ <i>Eastern</i>	67
<i>Butaster indicus</i>	46
<i>Buteo hemilasius</i>	50
„ <i>plumipes</i>	50
<i>Buteonidae</i>	5, 43
<i>Buteoninae</i>	5, 43, 49
<i>Butorides javanicus</i>	22
<i>Buzzards</i>	5, 43, 49
„ <i>Harrier</i>	50
„ <i>Himalayan Rough-legged</i>	50
„ <i>White-tailed</i>	50
<i>Calcarius lapponicus</i>	213
<i>Calidris leucophaea</i>	77
<i>Calliope calliope</i>	154
<i>Campephaga melanoptera</i>	174
<i>Campephagidae</i>	6, 172
<i>Caprimulgidae</i>	6, 106
<i>Caprimulgus jotaka</i>	177
<i>Carpodacus erythrinus</i>	209
<i>Casarca feruginea</i>	34

	PAGE
<i>Cerchnis saturatus</i>	42
„ <i>tinnunculus</i>	43
<i>Certhiidae</i>	7, 204
<i>Ceryle guttulata</i>	99
„ <i>lugubris</i>	99
„ <i>rudis insignis</i>	100
<i>Cettia canturians</i>	163
„ <i>fortipes</i>	164
<i>Chaetura caudacuta</i>	108
<i>Charadriidae</i>	6, 68
<i>Charadriiformes</i>	68
<i>Charadrius fulvus</i>	77
<i>Chaulelasmus streperus</i>	34
<i>Chettusia cinerea</i>	68
<i>Chloris sinica</i>	211
<i>Chibia hottentotta</i>	176
<i>Chicken, Bamboo</i>	55
<i>Cichloselys sibiricus</i>	151
<i>Ciconia nigra</i>	22
<i>Ciconiidae</i>	5, 22
<i>Ciconiiformes</i>	5, 12
<i>Circinae</i>	5, 47
<i>Circus aeruginosus</i>	48
„ <i>cyaneus</i>	48
„ <i>macrurus</i>	49
„ <i>melanoleucus</i>	49
„ <i>pygargus</i>	49
„ <i>spilonotus</i>	49
<i>Cinclidae</i>	6, 156
<i>Cinclus pallasi souliei</i>	157
<i>Cisticola cisticola tinnabulans</i>	165
<i>Classification</i>	4
<i>Clamator coromandus</i>	93
<i>Clangula clangula</i>	35
„ <i>glaucion</i>	35
<i>Coccothraustes coccothraustes</i> <i>japonicus</i>	208
<i>Coccytes coromandus</i>	93
<i>Coleus dauricus</i>	192, 195
„ <i>neglectus</i>	192, 195
<i>Columbidae</i>	6, 87
<i>Colymbiformes</i>	4, 7
<i>Colymbus auritus</i>	12
„ <i>cristatus</i>	11
„ <i>philippensis</i>	9
<i>Copsychus saularis</i>	152
<i>Coots</i>	59, 65
<i>Coraciidae</i>	6, 95
<i>Coraciiformes</i>	6, 94
<i>Cormorants</i>	5, 13, 14
<i>Corvidae</i>	7, 191, 192
<i>Corvus frugilegus pastinator</i>	192, 194
„ <i>macrorhynchus levillanti</i>	192, 193
„ <i>torquatus</i>	192
<i>Coturnicops exquisita</i>	66

	PAGE
Coturnix communis	53
„ coturnix	53
„ japonica	55
Crake, Baillon	66
„ Exquisite	66
Cranes	5, 66
„ Gray... ..	66
„ Green-billed	66
„ Manchurian	66
„ White-headed	66
„ White Siberian	66
Creepers... ..	7, 204
„ Red-winged	204
Crows	7, 191
„ Big-billed	193
„ Collared	192
„ King	175
Crowtits... ..	7, 187
„ Austen's... ..	188
„ Heude's... ..	188
„ Rufous	189
„ Webb's	188
Cuckoos	6, 90
„ Common... ..	91
„ Dark or Hill... ..	94
„ Hawk	94
„ Indian	92
„ Red-winged Crested	93
„ Small	94
Cuculus canorus telephonus	91
„ intermedius	94
„ micropterus	92
„ optatus	94
Cuculidae	6, 90
Cuculiformes... ..	6, 90
Curlews	6, 77
„ Eastern	77
„ Little	77
Cryptolopha valentini	145
Cyanopica cyanus... ..	192, 197
Cyanoptila cyanomalacna	144
Cyanosylvia suecica robusta	156
Cygninae	5, 24
Cygnopsis cygnoides	29
Dafila acuta	34
Dayal Bird	152
Dendrocopus cabinisi	110
Dendrocygna javanica	34
Dendronanthus indicus	123
Dicruridae	6, 175
Dippers	6, 156
„ South China	157
Divers	7
„ Red-throated	8

	PAGE
<i>Dotterel, Eastern</i> ...	77
<i>Doves</i> ...	6, 87
<i>Spotted-necked</i> ...	87
<i>Red Turtle</i> ...	89
<i>Drongos</i> ...	6, 175
<i>Drongo, Black</i> ...	175
<i>Hairy Crested</i> ...	176
<i>White-cheeked</i> ...	177
<i>Dryobates cabanisi</i> ...	110
<i>Dryonastes perspicillatus</i> ...	131
<i>Ducks</i> ...	5
<i>Eastern White-eyed</i> ...	36
<i>Mallard</i> ...	29
<i>Mandarin</i> ...	34
<i>Pintail</i> ...	34
<i>River</i> ...	5, 29
<i>Sea</i> ...	5, 34
<i>Tufted</i> ...	35
<i>Yellow-nib</i> ...	30
<i>Dunlin</i> ...	76
<i>Dupetor flavicollis</i> ...	22
<i>Eagles</i> ...	5. 43, 46
<i>Bonelli's</i> ...	47
<i>Buzzard</i> ...	44
<i>Grey-faced Buzzard</i> ...	46
<i>Hodgson's Hawk</i> ...	47
<i>Imperial</i> ...	47
<i>Large Spotted</i> ...	47
<i>Sea</i> ...	44
<i>White-tailed Sea</i> ...	46
<i>Egret, Cattle</i> ...	22
<i>Great</i> ...	22
<i>Lesser</i> ...	22
<i>Little</i> ...	22
<i>Egretta garzetta</i> ...	22
<i>Emberiza aureola</i> ...	219
<i>castaneiceps</i> ...	218
<i>chrysophrys</i> ...	219
<i>cioides</i> ...	217
<i>elegans</i> ...	218
<i>fucata</i> ...	214
<i>pallasi</i> ...	221
<i>pusilla</i> ...	216
<i>rustica</i> ...	215
<i>rutila</i> ...	220
<i>spodocephala</i> ...	213
<i>melanops</i> ...	214
<i>tristrami</i> ...	216
<i>yessoensis</i> ...	220
<i>Enicuridae</i> ...	6, 129
<i>Enicurus sinensis</i> ...	129
<i>Eophona melanura</i> ...	207
<i>personata magnirostris</i> ...	208
<i>Erithacus sibilans</i> ...	156

	PAGE
<i>Erolia ferruginea</i>	76
<i>Erythropus amurensis</i>	43
<i>Eunetta falcata</i>	33
„ <i>formosa</i>	32
<i>Eurynorhynchus pygmaeus</i>	77
<i>Eurystomus orientalis calonyx</i>	95
F <i>Falco aesalon</i>	41
„ <i>peregrinator</i>	43
„ <i>peregrinus</i>	39
„ <i>regulus</i>	41
„ <i>subbuteo</i>	40
„ <i>tinnunculus saturatus</i>	42
<i>Falcon, Shakin</i>	43
„ <i>Eastern Red-footed</i>	43
<i>Falconet, White-legged</i>	43
<i>Falconidae</i>	5, 38
<i>Falconiformes</i>	5, 38
<i>Falcons</i>	5, 38
<i>Finch, Crimson</i>	209
„ <i>Chinese Green</i>	211
<i>Finches</i>	7
<i>Flycatchers</i>	6
„ <i>Blue and White</i>	144
„ <i>Brown</i>	141
„ <i>Grey-spotted</i>	142
„ <i>Ince's Paradise</i>	144
„ <i>Japanese Paradise</i>	145
„ <i>Narcissus</i>	141
„ <i>Old World</i>	139
„ <i>Red-throated</i>	140
„ <i>Robin</i>	142
„ <i>Siberian</i>	141
„ <i>Tricolor</i>	143
<i>Forktails</i>	6, 129
„ <i>Chinese</i>	129
„ <i>Little</i>	130
<i>Fringilla montifringilla</i>	211
<i>Fringillidae</i>	7, 206
<i>Fulica atra</i>	65
<i>Fuligulinae</i>	5, 34
G <i>Gadwall</i>	34
<i>Gallierex cinerea</i>	63
<i>Galliformes</i>	5, 51
<i>Gallinago coelestis</i>	73
„ <i>gallinago</i>	73
„ <i>megala</i>	74
„ <i>solitaria</i>	77
„ <i>stenura</i>	74
<i>Gallinula chloropus</i>	61
„ <i>phoenicurus</i>	62
<i>Gallinules</i>	59
<i>Garrulus sinensis</i>	192, 199
<i>Gavia septentrionalis</i>	8

	PAGE
<i>Gavia stellata</i>	8
<i>Gaviidae</i>	4, 7
<i>Gecinus guerini</i>	109
<i>Geese</i>	5, 25
„ <i>True</i>	5
<i>Glareolidae</i>	6, 78
<i>Glaucidium brodiei</i>	106
„ <i>whiteleyi</i>	105
<i>Glottis nebularius</i>	77
<i>Goatsuckers</i>	6, 106
<i>Godwit, Pacific</i>	77
„ <i>Black-tailed</i>	77
<i>Gold Crest</i>	169
<i>Golden Eye</i>	35
<i>Goose, Bean</i>	27
„ <i>Grey Lag</i>	27
„ <i>Lesser White-fronted</i>	26
„ <i>Pygmy</i>	27
„ <i>Swan</i>	29
„ <i>White-fronted</i>	25
<i>Goshawk, Horsfield's</i>	51
„ <i>Temminck's</i>	51
<i>Gracbes</i>	4, 9
„ <i>Eared</i>	12
„ <i>Eastern Little</i>	9
„ <i>Great Crested</i>	11
<i>Greenshank</i>	77
<i>Gruidae</i>	5, 66
<i>Gruiformes</i>	5, 59
<i>Grus japonensis</i>	66
„ <i>lilfordi</i>	66
„ <i>monachus</i>	66
<i>Gulls</i>	6, 80
„ <i>Black-tailed</i>	82
„ <i>Common</i>	82
„ <i>Laughing</i>	83
„ <i>Saunders's</i>	84
„ <i>Yellow-legged Herring</i>	81
<i>Haematopus osculans</i>	78
<i>Halcyon coromandus major</i>	100
„ <i>pileatus</i>	98
„ <i>smyrnensis</i>	100
<i>Haliastur albieilla</i>	46
<i>Haliastur indus</i>	46
<i>Harriers</i>	5, 47
„ <i>Eastern Marsh</i>	49
„ <i>Hen</i>	48
„ <i>Marsh</i>	48
„ <i>Montagu's</i>	49
„ <i>Pale</i>	49
„ <i>Pied</i>	49
<i>Hawfinch Black-headed</i>	207
„ <i>Common</i>	208
„ <i>Masked</i>	208

	PAGE
<i>Hawks</i>	5, 43
<i>Besra Sparrow</i>	51
<i>Fish</i>	43
<i>Japanese Sparrow</i>	51
<i>Sparrow</i>	5, 50
<i>Helodromus ochropus</i>	70
<i>Hemichelidon griseisticta</i>	142
" <i>sibirica</i>	141
<i>Hemipodes</i>	51
<i>Herodias alba</i>	22
<i>Hérons</i>	5, 15
<i>Black Crowned Night</i>	20
<i>Cinnamon</i>	19
<i>Eastern Purple</i>	22
<i>Grey</i>	16
<i>Little Green</i>	22
<i>Pond</i>	17
<i>Von Schrenck's Little</i>	22
<i>Yellow-necked</i>	22
<i>Heteractitis brevipes</i>	77
<i>Hierococyx fugax nasicolor</i>	94
<i>Himantopus himantopus</i>	76
<i>Hirundinidae</i>	6, 169
<i>Hirundo gutturalis</i>	171
" <i>nipalensis</i>	172
<i>Hobby</i>	40
<i>Hoopes</i>	6, 100, 101
<i>Horornis canturians</i>	163
" <i>fortipes</i>	164
<i>Hydrochelidon hybrida</i>	87
" <i>leucoptera</i>	85
<i>Hydrophasianus chirurgus</i>	79
<i>Hydroprogne caspia</i>	85
<i>Hypotaenidia jouyi</i>	65
<i>Hysipetes amaurotis</i>	138
" <i>leucocephalus</i>	137
<i>Lanthia cyanura</i>	155
<i>Ibis leucocephalus</i>	23
<i>Ibises (Ibididae)</i>	5, 23
" <i>Japanese Crested</i>	23
<i>Iyngipicus scintilliceps</i>	111
<i>Iynx torquilla</i>	112
<i>Jacanas</i>	6, 78
" <i>Pheasant-tailed</i>	79
<i>Jacaniidae</i>	6, 78
<i>Jackdaw, Black</i>	195
" <i>Pied</i>	195
<i>Jay, Chinese</i>	199
<i>Jynx torquilla</i>	112
<i>Kestrel, Darker</i>	42
" <i>Japanese</i>	43
<i>Ketupa flavipes</i>	106
<i>Key to the Corvidae</i>	192

	PAGE
<i>Key to the Pipits</i>	117
„ „ „ <i>Wagtails</i>	122, 123
<i>Kingfishers</i>	6, 96
„ <i>Black-capped</i>	98
„ <i>Great Spotted</i>	99
„ <i>Little Blue</i>	96
„ <i>Pied</i>	100
„ <i>Ruddy</i>	100
„ <i>White-breasted</i>	100
<i>Kinglets</i>	6, 168
<i>Kites</i>	5, 43, 44
„ <i>Black-eared</i>	45
„ <i>Brahminy</i>	46
<i>Knot</i>	77
„ <i>Big-billed</i>	77
Laniidae	7, 178
<i>Lanius bucephalus</i>	181
„ <i>cristatus</i>	181
„ <i>lucionensis</i>	180
„ <i>magnirostris</i>	183
„ <i>schach</i>	180
„ <i>sphenocercus</i>	179
„ <i>superciliosus</i>	181
„ <i>tephronotus</i>	180
„ <i>tigrinus</i>	183
<i>Lapwings</i>	6, 69
„ <i>Grey</i>	68
<i>Laridae</i>	6, 80
<i>Larinae</i>	6, 80
<i>Larks</i>	6, 115
<i>Larus cachinnans</i>	81
„ <i>canus</i>	82
„ <i>crassirostris</i>	82
„ <i>melanurus</i>	82
„ <i>ridibundus</i>	83
„ <i>saundersi</i>	84
„ <i>vegae</i>	84
<i>Larvivora cyanea</i>	154
<i>Leptoptilus javanicus</i>	23
<i>Limnodromus indicus</i>	123
<i>Limnobaenus fuscus</i>	66
„ <i>paykulli</i>	66
„ <i>taczanowski</i>	77
<i>Limosa lapponica baueri</i>	77
„ <i>limosa</i>	77
<i>Lobivanellus cinereus</i>	68
<i>Locustella certhiola</i>	159
„ <i>fasciolata</i>	161
„ <i>lanceolata</i>	160
<i>Loons</i>	4, 7
„ <i>Red-throated</i>	8
Magpies	191
„ <i>Azure-winged</i>	197

	PAGE
<i>Magpies Chinese Blue</i>	198
„ <i>Pied</i>	196
<i>Mareca penelope</i>	34
<i>Marila baeri</i>	36
„ <i>ferina</i>	36
„ <i>fuligula</i>	35
„ <i>marila</i>	36
„ <i>mariloides</i>	36
<i>Martin, Sand</i>	170
<i>Mergansers</i>	5, 36, 37
„ <i>Red-breasted</i>	38
<i>Mergellus albellus</i>	36
<i>Merginae</i>	5, 36
<i>Mergus albellus</i>	36
„ <i>castor</i>	37
„ <i>merganser</i>	37
„ <i>serrator</i>	37
<i>Merlin</i>	41
<i>Meropidae</i>	6, 100
<i>Merula mandarina</i>	146
<i>Mesaphoyx intermedia</i>	22
<i>Mesoscolopax minutus</i>	77
<i>Microcichla scouleri</i>	130
<i>Microhierax melanoleucus</i>	43
<i>Micropodidae</i>	6, 108
<i>Microsarcops cinereus</i>	68
<i>Milvinae</i>	5, 44
<i>Milvus melanotis</i>	45
<i>Minivets</i>	6, 172
„ <i>Black-winged</i>	174
„ <i>Gray</i>	173
„ <i>Lesser Scarlet</i>	174
„ <i>Swinhoe's</i>	173
<i>Moorhen</i>	61
<i>Motacilla boarula</i>	126
„ <i>leucopsis</i>	123
„ <i>melanope</i>	126
<i>Motacillidae</i>	6, 116
<i>Munia, Chinese</i>	206
„ <i>Sharp-tailed</i>	205
<i>Munia, acuticauda</i>	205
„ <i>punctulata topela</i>	206
<i>Muscicapa albicilla</i>	140
„ <i>grisola</i>	142
<i>Muscicapidae</i>	6, 139
<i>Myiophoneus caeruleus</i>	150
<i>Mynah, Crested</i>	200
<i>Nannocnus eurythmus</i>	22
<i>Nettapus coromandelianus</i>	27
<i>Nettion crecca</i>	31
„ <i>formosum</i>	32
<i>Nettium crecca</i>	31
<i>Nightjars</i>	106
„ <i>Japanese</i>	107

	PAGE
Ninox japonica	106
Nipponia nippon	23
Nisaetus fasciatus	47
Numenius arquatus lineatus	77
„ phaeopus variegatus... ..	77
Nuthatches	7, 183
„ Chinese	184
Nycticorax griseus	20
„ nycticorax	20
Oethodromus geoffroyi	77
„ veredus... ..	77
Oenopopelia humilis	89
Oidemia carbo	36
„ fusca	36
Olor bewicki minor	25
„ cygnus	25
Oreicola ferrea	156
Oreocinclla varia	151
Oriole, Black-naped	190
Orioles	7, 190
Oriolidae	7, 190
Oriolus diffusus	190
Ospreys	5, 43, 44
Otidæ	5, 67
Otis dybowskii	67
Otus glabripes	106
„ semitorques... ..	106
„ stictonotus	106
Ouscl, Brown Japanese	150
„ Dusky	150
„ Gray	148
„ Gray-backed	147
„ Pale	148
„ Red-tailed... ..	149
Owlet, Whiteley's... ..	105
Owls	6, 102
Owls, Brown Hawk	106
„ Collared Pygmy	106
„ Dusky Horned	106
„ Elegant	106
„ Great Eagle	103
„ Half-collared	106
„ Horned	103
„ Long-eared	104
„ Short-eared	104
„ Spotted Pygmy... ..	106
„ Tawny Fish	106
Oyster Catcher	78
Padda oryzivora	206
Pandion haliaetus... ..	44
Pandioninae	5, 43
Paradoxornis guttaticollis	188
„ heudei	188

	PAGE
Paradoxornithidae	7, 187
Pardilaparus venustulus	185
Paridae	7, 184
<i>Partridges</i>	5, 53
<i>Bamboo</i>	55
<i>Parus minor</i>	184
<i>palustris</i>	185
<i>Passer montanus</i>	209
<i>rutilans</i>	210
Passeriformes	6, 114
Pelecanidae	5, 12
<i>Pelecanus philippensis</i>	14
<i>Pelicans</i>	5, 12
<i>Spotted-billed</i>	13
<i>Pelidna alpina</i>	76
Perdiciinae	5, 53
<i>Peregrine</i>	39
<i>Falcon</i>	39
<i>Pericrocotus brevirostris</i>	174
<i>cantonensis</i>	173
<i>cinereus</i>	173
<i>Petrophila gularis</i>	151
<i>manilla</i>	151
<i>solitaria</i>	151
Phalacrocoracidae	5, 13
<i>Phalacrocorax carbo</i>	14
Phasianidae	5, 53
Phasianinae	56
<i>Phasianus holdereri</i>	56
<i>reevesi</i>	59
<i>torquatus</i>	56
<i>Pheasants</i>	5, 53, 56
<i>Darwin's</i>	59
<i>Reeve's</i>	59
<i>Ring-necked</i>	56
<i>Water</i>	78
<i>Phoenicurus auroreus</i>	152
<i>Pica pica sericea</i>	192, 196
Picidae	6, 108
<i>Picumnus chinensis</i>	111
<i>Picus cabanisi</i>	110
<i>canus</i>	114
<i>guerini</i>	109
<i>Pigeons</i>	6, 87
<i>Blue</i>	88
<i>Pipits</i>	6, 116
<i>Blakiston's Water</i>	120
<i>Eastern Tree</i>	121
<i>Water</i>	120
<i>Red-throated</i>	119
<i>Richard's</i>	118
<i>Pisobia acuminata</i>	76
<i>damacensis</i>	76
<i>platyrhyncha</i>	76
<i>ruficollis</i>	77

	PAGE
<i>Pisobia temminckii</i>	76
<i>Planesticus mandarinus</i>	146
<i>Platalea leucorodia</i>	24
„ <i>minor</i>	24
<i>Plateleidae</i>	5, 23
<i>Ploceidae</i>	7, 204
<i>Plovers</i>	6, 68
„ <i>Eastern Golden</i>	77
„ <i>Geoffroy's Sand</i>	77
„ <i>Gray Black-bellied</i>	77
„ <i>Hodgson's Ringed</i>	77
„ <i>Kentish</i>	77
„ <i>Little Ringed</i>	77
„ <i>Mongolian Sand</i>	77
<i>Pochard</i>	36
<i>Podicipedidae</i>	4, 9
<i>Podiceps cristatus</i>	11
„ <i>minor</i>	9
<i>Polionetta zonorhyncha</i>	30
<i>Poliomyas luteola</i>	142
<i>Pomatorhinus stridulus</i>	133
„ <i>styani</i>	133
<i>Porzana pusilla auricularis</i>	66
<i>Pratincoles</i>	6, 78
<i>Pratincola maura</i>	156
<i>Pseudogeranus leucauchen</i>	66
<i>Pucrasia darwini</i>	58
„ <i>joretiana</i>	59
<i>Pycnonotide</i>	6, 135
<i>Pycnonotus sinensis</i>	136
„ <i>xanthorrous</i>	137
<i>Pyrhula griseiventris</i>	209
<i>Quails</i>	5, 53
„ <i>Blanford's Button</i>	52
„ <i>Bustard</i>	5, 51
„ <i>Common</i>	53
„ <i>Japanese</i>	55
„ <i>Old World</i>	5, 53
<i>Querquedula crecca</i>	31
„ <i>querquedula</i>	34
<i>Rails</i>	5, 59
„ <i>Blue-banded</i>	65
„ <i>Indian Water</i>	60
„ <i>Red-throated</i>	66
<i>Rallidae</i>	5, 59
<i>Rallus indicus</i>	60
<i>Recurvirostra avosetta</i>	76
<i>Red-shank</i>	77
„ <i>Spotted</i>	77
<i>Redstart, Daurian</i>	152
„ <i>Plumbeous Water</i>	153
<i>Regulidae</i>	6, 168
<i>Reguloides proregulus</i>	166

	PAGE
Reguloides superciliosus	166
Regulus cristatus	169
Remiza consobrina	187
Rhyacophilus glareola... ..	77
Rhyacornis fuliginosus	153
Rhynchaea capensis	75
Riparia riparia	170
Robin, <i>Blue-tailed</i>	155
Rollers	6, 95
,, <i>Broad-billed</i>	95
Rook, <i>Eastern</i>	194
Rostratula benghalensis	75
Ruby Throat... ..	154
Ruticilla aureora	152
<i>Sanderling</i>	77
Sandpiper <i>Common</i>	71
,, <i>Green</i>	70
,, <i>Spoonbill</i>	77
,, <i>Terek</i>	77
,, <i>Wood</i>	77
Sarcogeranus leucogeranus... ..	66
Scaup	36
,, <i>Eastern</i>	36
Scelopax rusticola	72
Scoter, <i>Velvet</i>	36
,, <i>Eastern Velvet</i>	36
Sheldrake	34
,, <i>Ruddy</i>	34
Shoveller	34
Shrikes	7, 178
,, <i>Bull-headed</i>	181
,, <i>Cuckoo</i>	172
,, <i>Eastern Gray</i>	179
,, <i>Grey-backed</i>	180
,, <i>Indian Brown</i>	181
,, <i>Japanese Red-tailed</i>	181
,, <i>Philippine Red-tailed</i>	180
,, <i>Red-backed</i>	180
,, <i>Thick-billed</i>	183
Silver Eyes	7, 202
,, <i>Eye</i>	203
,, <i>Brown-flanked</i>	204
Siphia albicilla	140
Siskin	212
Sitta caesia sinensis	184
Sittidae	7, 183
Skylark... ..	115
Snew	36
Snipe	6, 68
,, <i>Fantail</i>	73
,, <i>Greater Spring</i>	74
,, <i>Lesser Spring</i>	74
,, <i>Painted</i>	75
,, <i>Pintail</i>	74

	PAGE
<i>Snipe Solitary</i>	77
„ <i>Swinhoe's</i>	74
<i>Snippet</i>	70
<i>Sparrows</i>	7, 206
„ <i>Java</i>	206
„ <i>Ruddy</i>	210
„ <i>Tree</i>	209
<i>Spatula clypeata</i>	34
<i>Spilopelia chinensis</i>	87
<i>Spinus spinus</i>	212
<i>Spizaetus nipalensis</i>	47
<i>Spizixus semitorques</i>	138
<i>Spodiopsar cineraceus</i>	201
„ <i>sericeus</i>	202
<i>Spoonbills</i>	5, 23
„ <i>Greater</i>	24
„ <i>Lesser</i>	24
<i>Squatarola squatarola</i>	77
<i>Starlings</i>	7, 200
„ <i>Gray</i>	201
„ <i>Silky</i>	202
<i>Stachyridopsis ruficeps</i>	135
<i>Starlet Daurian</i>	202
<i>Stilt, Black-winged</i>	77
<i>Stint, Broad-billed</i>	76
„ <i>Curlew</i>	76
„ <i>Long-toed</i>	76
„ <i>Red-necked</i>	77
„ <i>Sharp-tailed</i>	76
„ <i>Temminck's</i>	76
<i>Stonechat, Eastern</i>	156
„ <i>Gray</i>	156
<i>Stork, Black...</i>	22
„ <i>Painted</i>	23
<i>Storks</i>	5, 22
<i>Streptopelia humilis</i>	89
<i>Strigidae</i>	6, 102
<i>Sterna fluviatilis</i>	86
„ <i>hirundo</i>	86
„ <i>sinensis</i>	86
<i>Sturnidae</i>	7, 200
<i>Sturninae</i>	6, 84
<i>Suthora suffusa</i>	189
„ <i>webbiana</i>	188
<i>Suya crinigera</i>	134
<i>Swallows</i>	6, 169
„ <i>Eastern House</i>	171
„ <i>Golden-backed</i>	172
„ <i>Mosque</i>	172
<i>Swans</i>	5, 24
„ <i>Bewick's</i>	25
„ <i>Whooper</i>	25
„ <i>Wild</i>	25
<i>Swifts</i>	6, 108
„ <i>Large White-rumped</i>	108

	PAGE
<i>Swifts Spine-tailed</i>	108
<i>Sylviidae</i>	6, 158
<i>Tadorna tadorna</i>	34
<i>Tattler, Eastern Wandering</i>	77
<i>Tal, Common</i>	31
„ <i>Cotton</i>	27
„ <i>Falcated</i>	33
„ <i>Garganey</i>	34
„ <i>Green-winged</i>	31
„ <i>Lesser Whistling</i>	34
„ <i>Spectacled</i>	32
<i>Terekia cinerea</i>	77
<i>Terns</i>	6, 80, 84
„ <i>Caspian</i>	85
„ <i>Chinese Little</i>	86
„ <i>Fork-tailed</i>	86
„ <i>Whiskered</i>	87
„ <i>White-winged Black</i>	85
<i>Terpsiphone incii</i>	144
„ <i>princeps</i>	145
<i>Threskiornithidae (Ibididae)</i>	5, 23
<i>Thrushes</i>	6, 145
„ <i>Babbling</i>	6, 131
„ <i>Brown Laughing</i>	132
„ <i>Fruit</i>	135
„ <i>Red-bellied Rock</i>	151
„ <i>Red-breasted Rock</i>	151
„ <i>Siberian Ground</i>	151
„ <i>Spectacled Laughing</i>	131
„ <i>White's Ground</i>	151
„ <i>White-throated Rock</i>	151
„ <i>Violet Whistling</i>	150
<i>Tichodroma muraria</i>	204
<i>Timeliidae</i>	6, 131
<i>Tit, Brown</i>	187
„ <i>Lesser Gray</i>	184
„ <i>Marsh</i>	185
„ <i>Red-headed</i>	187
„ <i>Silver-throated</i>	186
„ <i>Yellow</i>	185
<i>Titmice</i>	7, 184
<i>Totanus erythropus</i>	77
„ <i>hypoleucos</i>	71
„ <i>ochropus</i>	70
„ <i>totanus</i>	77
<i>Tringa canutus</i>	76
„ <i>crassirostris</i>	76
<i>Tringoides hypoleucos</i>	71
<i>Trochalopteron canorum</i>	132
<i>Troglodytidae</i>	6, 157
<i>Turdus chrysolaus</i>	150
„ <i>eunomus</i>	150
„ <i>hortulorum</i>	147
„ <i>naumanni</i>	149

	PAGE
<i>Turdus obscurus</i>	148
„ <i>pallidus</i>	148
<i>Turdidae</i>	6, 145
<i>Turnicidae</i>	5, 51
<i>Turnix blanfordi</i>	52
„ <i>maculatus</i>	52
<i>Turnstone</i>	78
<i>Turtur chinensis</i>	87
„ <i>humilis</i>	89
„ <i>orientalis</i>	88
„ <i>rupicola</i>	88
<i>Upupa epops</i>	101
<i>Upupidae</i>	6, 100
<i>Urocissa sinensis</i>	192, 198
<i>Uroloncha squamicollis</i>	205
<i>Vanellus cristatus</i>	69
„ <i>vanellus</i>	69
<i>Vultur monachus</i>	47
<i>Vultures</i>	5, 47
„ <i>Cinereous</i>	47
<i>Vulturinae</i>	5, 47
<i>Wagtails</i>	6, 116
„ <i>Blue-headed</i>	128
„ <i>Eastern Gray</i>	136
„ „ <i>Pied</i>	125
„ <i>Forest</i>	123
„ <i>Gray-headed</i>	127
„ <i>Green-headed</i>	128
„ <i>Streak-eyed</i>	125
„ <i>White-faced</i>	123
„ <i>Yellow-headed</i>	128
<i>Warblers</i>	6, 158
„ <i>Arctic Willow</i>	167
„ <i>Brown-streaked Hill</i>	134
„ <i>Chinese Bush</i>	163
„ <i>Crowned Willow</i>	167
„ <i>Eastern Great Reed</i>	161
„ <i>Gray's Grasshopper</i>	161
„ <i>Paddy-field</i>	162
„ <i>Pale-legged Willow</i>	168
„ <i>Pallas' Grasshopper</i>	159
„ „ <i>Willow</i>	166
„ <i>Rufous Fantail</i>	165
„ <i>Schrenk's Reed</i>	162
„ <i>South China Bush</i>	164
„ <i>Streaked Grasshopper</i>	160
„ <i>Yellow-browed Willow</i>	166
<i>Water Cock</i>	63
<i>Water Hen, Crimson-legged</i>	66
„ <i>White-breasted</i>	62
<i>Waxwings</i>	6, 177
„ <i>Bohemian</i>	177

	PAGE
<i>Waxwings Japanese</i>	178
<i>Weaver Birds</i>	7, 204
<i>Whimbrel, Eastern</i>	77
<i>Whooper</i>	25
<i>Widgeon</i>	34
<i>Woodchat</i>	156
<i>Blue</i>	154
<i>Woodcock</i>	72
<i>Woodpeckers</i>	6, 108
<i>North China Green</i>	114
<i>Pied</i>	110
<i>Spark-headed</i>	111
<i>Yangtse Green</i>	109
<i>Wrens</i>	6, 157
<i>Eastern</i>	158
<i>Xanthopygia narcissina</i>	143
<i>tricolor</i>	143
<i>xanthopygia</i>	143
<i>Yungipicus scintiliceps</i>	111
<i>Zosteropidae</i>	7, 202
<i>Zosterops erythropleurus</i>	204
<i>simplex</i>	203







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